

MEMOIRS
OF
Monsieur GOULON.
BEING A
TREATISE
ON THE
Attack and Defence of a Place.
To which is added, a
JOURNAL
OF THE
SIEGE of *ATH*,
In the YEAR 1697,
Under the CONDUCT of
Monsieur *de VAUBAN*.

For the USE of the YOUNG GENTLEMEN of the
ROYAL ACADEMY at *WOOLWICH*.

LONDON:

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M E M O I R S

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TO
 His GRACE the DUKE
 OF
 MONTAGU,
 MASTER-GENERAL
 OF HIS
 MAJESTY'S Ordnance, &c. &c.

MY LORD,

I Am conscious of my rashness, in
 presuming to offer your Grace
 a Translation from a Language
 your Grace is much better acquaint-
 ed with, than the Translator; but,
 the Original being the Work of a
 great Master, in an Art where
 Books are much wanting, I thought
 an indifferent Translation might be
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of use to young Gentlemen engaged in that Study, who may not yet perhaps be familiar enough with the French to read the Original; and your Grace, though a great Patron of Science in general, more immediately honouring this Branch and Academy with your Government and Inspection, I flatter myself, that an Attempt for their service may be received into your Grace's Protection, at least so far as to obtain a pardon for venturing to subscribe myself,

My Lord,

Your Grace's

most obedient,

and most humble

Servant,

John Heath.

*Woolwich Academy,
Feb. 21. 1745.*

THE
French BOOKSELLER
TO THE
R E A D E R.

THIS Book needs no encomiums. The several editions it has ran through in *Holland* and other countries, and the earnest desire expres'd by the publick for it's reception, are sufficient evidence of it's value. The great reputation likewise which Monsieur *Goulon*, it's Author, acquir'd in military Affairs, where he so eminently distinguish'd himself, together with the considerable Posts to which his merit rais'd him both in *France* and *Germany*, are more than a sufficient recommendation of whatever comes from his hands. I shall take the liberty to add, that this Book deserves the better reception,

tion, as we have no Author who treats this Subject with so much method and exactness, who at the same time points out all the different Movements to be made by the Besieged in order to defend their Place, and all the Stratagems to be practised by the Besiegers either to surprisè it, or to carry it by Force.

To make this edition more acceptable, I have annexed a Journal and Plan of the Siege of *Ath*; all the world knows that Monsieur *de Vauban*, who conducted it, shew'd so much judgment, and so exactly follow'd the rules of his own Art, that it may well pass for a Masterpiece, and a compleat Model of the Siege of a regular Place; 'tis this which has induced me to bring this small Tract to light, in confidence that so just and instructive an account cannot fail of being receiv'd with pleasure, by all who have any knowledge in that Art.



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treats this Subject with so much
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time point out all the
Movements to do that in the
design of the work, and all the
and by the way, I have
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To make the work more
acceptable, I have added a Journal
and Plan of the work, and
the world knows, and I have
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to much judgment, and I have
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it may be read for a Masterpiece,
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ERRATA in the MEMOIRS.

Page 19, line 16, at Arms, a Comma; at hand, a Semicolon. p. 31, l. 3, for they, read will. p. 34, l. 11, for Besiegers, r. Besieged. p. 35, l. 14, for Pallisades, r. Palisades. p. 43, l. 15, del. the words, and hack; l. 26, for distance, r. Defence. p. 48, l. 24, after close Discharge, add, from their Small-Arms; the last l. instead of those of, r. that from. p. 52, l. 15, for between, r. towards. p. 53, l. 1, for Besiegers, r. Besieged. p. 66, l. 18, for Water level, r. Springs. p. 67, l. penult. for Fusée, r. Fuse. p. 71, l. 25, del. the words, which they had near the Water level. p. 81, l. 20, for Besiegers, r. Besieged.

ERRATA in the JOURNAL.

Page 91, line 1, for *Haiault*, read *Hainault*. p. 96, l. 5, for *Kemedé*, r. *Hamedé*. p. 110, for C, r. G. p. 120, for O, r. P. and for P. r. O.





M E M O I R S

O F

Monfieur *GOULON*.



LEAVE to the General, who commands before the town, the care of investing it in such a manner as to cut off all hopes of succours from the Besieged; and to those, who are concerned for its preservation, to see it so well provided with all things necessary for its defence, that it may be enabled to hold out a long time assisted by the skilful conduct of those within. This being supposed to have been done on both sides, and the Besiegers set down before the place, in the manner they think proper, they fall to work without ceasing at the Communications of their Quarters, and at their Lines of Circumvallation.

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If the Garison is considerable as I suppose it, the Besiegers will likewise draw Lines of Contravallation, strengthening them with Redans and Redoubts, and will take care to possess themselves of all the eminencies, as far as lies in their power, to have an extensive view and command of all that approach them; and, if they meet with any thing of that kind which cannot be taken within their Lines, will make a Redoubt or some other work there, and put a proper Guard in it. Matters being thus disposed, the next thing to be considered is the opening of the Trenches, in order to which a prodigious quantity of Fascines and Gabions must be got together.

The Besieged on their part may begin to incommode the Enemy, by putting all their Guns in Battery on the Rampart, but firing their small pieces only, till the Enemy are incamped, to lead them into a belief, that they have no larger; in confidence of which they will venture to advance, and take post nearer, to contract their Line of Circumvallation; which would be a considerable point gained to them, if it were not founded on a mistake, and the larger Cannon, ruining their works, did not oblige them to decamp * and remove farther off.

* This happened to Monsieur de Calvo at Limbourg, who was twice obliged to retire, after having advanced with his Troops too far.

As



As it is not in the power of the Besieged to prevent the Enemy getting all their materials together, they ought to be very diligent and leave no means untried to discover the place where they are collected, from thence to form a judgment where to expect the attack, and prevent a surprise, it not being reasonable to suppose the Besiegers would carry them far from the place where they intend to make use of them; but, should their policy extend so far, the Spies of the Garison ought to give notice in time, before any design can be put in execution.

Before the opening of the Trenches, the Besiegers Engineers will reconnoitre the place as nearly as possible, about the dusk of the evening and in the day-time under favour of the * Hedges † or Hollow-ways which the negligence of the Besieged may have left behind them; which frequently happens, from the ‡ little care most Governors take to inform themselves of the ways by which they are most liable to be attacked, imagining that a work with a Revetement is

* The Dragoons when they came up at *Limbourg* lodged themselves amongst some Hedges within Musquet-shot of the place.

† At *Bouchain*, a Hollow-way served for a place of Arms, the first night of the Trenches within two Pistol-shot of the place,

‡ At *Mastricht* a Hollow-way served for the Queue of the Trenches.

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sufficient to secure a place from all danger, on that side, without reflecting how much their credit is concerned in the ease or difficulty of the Approaches, and that a Hollow-way, or a thick Hedge serving for the Queue of the Trenches within Musquet-shot of the place, advances the Siege three days, whereas * four hours are sufficient to lay a Work in ashes, when a Lodgment is once made upon the Counterscarp.

The Besieged, as soon as they find themselves invested or sooner, should endeavour to the utmost of their power to level the Hollow-ways and Cavities, cutting up the Hedges, and demolishing the Houses near the place, to keep the Enemy at a distance; and, as there are few Fortified Towns which have not some parts weaker than others and which it is of the utmost importance to the Governor to conceal the knowledge of from the Besiegers, he ought, from the day it is invested to the time the attacks are formed, constantly to send a party of two or three-hundred men to each of these weak places, there to lie upon their faces all night long without the Palisade.† These men are to be disposed in the form of a Semicircle;

* At *Bauchain* in two hours time, two Breaches were made in a Horn-work, for two men to march a-breast.

† This advice was given to *Monsieur de Montal*, at the Siege of *Charleroy*, and was put into execution till the Siege was raised,

being

being divided into small parties of six or four in a party, of which the first upon the right and left are to lie close to the Palisades; the rest, extending themselves forwards to about twenty or thirty paces distance from one another, will cover a large spot of ground. All these little parties, being thus disposed, and a signal agreed on, are to keep strict silence till day, and not to stir, unless they see somebody passing; which whoever first discovers is then instantly to rise, making the signal, upon which the rest doing the same all close into a body, and march directly to the Palisades. Thus without difficulty all that pass are taken in the net, without any possibility of relief from those who escort them, who are seldom so strong as to rescue them out of the hands of two or three-hundred men, just upon their own Covered-way. If those who passed by, and whom I suppose to be Engineers, should think fit in the Intervals between these parties to engage with any one of them, they will not mend the matter; for, should they escape being made prisoners, which is almost impossible not to happen, How will they be able to withstand the fire from the very muzzles of their pieces? Should the Besiegers be informed of this disposition of their Enemies beforehand, they will not know how to avail themselves

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themselves of the discovery ; for, if they send a stronger party against them, these last being in the posture above-mentioned will see or hear at a distance their Enemies approaching, and secure their retreat before they can be perceived themselves, and the Besiegers be left exposed to the fire of the Counter-scarp, and the great Guns of the Out-works and body of the place. So that the only course they can take, even when aware of this disposition, is not to reconnoitre so nearly, for fear of an accident, which is the very thing the Besieged desire of them ; and this practice, as I said before, is to be continued till the Attacks are formed. Had such a course as this been taken in the Towns we besieged in the last War, Monsieur *Vauban*, and they who after his example thought proper to reconnoitre so nearly, would have had but a very bad time of it.

The Engineers at their return having reported their observations, the General takes his measures accordingly, and they prepare for opening the Trenches. The materials are carried by the Cavalry to the place where the Queue is intended to be made : A great number of workmen are ordered for this service, and commands of horse and foot, in proportion to the strength of the Garrison. The best use is to be made, as I said before,

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before, of whatever may offer to facilitate the Approaches, and all advantages taken either of the ignorance or indolence of those in the place.* Good Epaulements must be made to cover the horse.

There are two different ways of opening the Trenches. If the Garison is weak and no apprehension of a Sortie, a Lodgment may be made the first night, as near as possible to the Palisades, and the work afterwards carried on backwards; but, if, on the contrary, the Garison is strong, more deliberation is necessary, though no time to be lost in advancing the work as far as possible, the first and second nights being the least dangerous of the whole Siege, as they are generally stolen upon the Besieged, especially the first, which is usually at a good distance from the place.

The Engineers ought to take particular notice of the nature of the ground, before they open the Trenches, in order to avoid, as much as possible, the being wet under feet; if it is a low country, they should go only one foot deep, instead of three, and in widening of them they will find more earth than sufficient to form a Parapet of Cannon-Proof.

* At the Siege of *Mastricht*, an Epaulement was made for the Horse Guard.

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The Besiegers should likewise take their measures according to the genius of the Enemy, as well as the strength of the Garrison; if they are a people, whose natural talent is activity and daring, good Redoubts must be made at proper distances, well staked and palisaded, and capable of containing two or three-hundred men to resist their first fire. It is a very difficult matter for a Sortie to succeed, where things are so well concerted for their reception. When this is done, the work begun in the night is to be perfected in the day, and Banquets to be made throughout wherever they are wanting.

Though it is usual to carry on Attacks, in two or three places, I shall speak of one only, the others being conducted after the same manner.

The Besieged perceiving the day come for the opening of the Trenches, either from the Enemy's motions, in carrying Fascines, or the information of their Spies, should immediately * point all their Guns over their Parapets, their great ones upon the Rampart, and their small ones on the Outworks; with these they will join some Mortars, and as soon as it begin to be dark throw a number of Fire-balls, which burn

* Mettront leurs Cannons a Barbet.

whatever.

whatever they meet *, and enlighten the ground for near a Musquet-shot all around, wherever they fall; by which means, they will have as full a view of the workmen, and of those who sustain them, as if it were broad day; will point their Guns with ease, and fire upon them at pleasure, not without making some havock and retarding their works. These Balls may be used in the manner I am now speaking of throughout the course of the Siege, and may be thrown by hand on the glacis or in the ditch, when the Besiegers are within the reach of them.

For a remedy to this inconveniency, the Besiegers may make use of small barrels cut in two, or buckets to take up water, and pour upon these Fire-balls to extinguish them as fast as they fall, or else smother them by throwing earth over them, by men appointed for that service; they ought likewise to be as expeditious as possible in raising their Cannon and Mortar Batteries, in order to prevent their firing so frequently with both from the town.

The Cannon and Mortars of the Besiegers being now directed to silence those of the Enemy will soon have their desired ef-

* The *Turks* made use of them at *Candia* to point their Cannon by night at the entrance of the harbour, which gave a light like day.

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fect, it being impossible to keep up those *at Barbet* in open day, or to prevent those at the Embasures from being dismounted in a very little time.

Under the protection of these Batteries the Besiegers will be enabled to advance the Trenches considerably in the day time by *Demi-sappe*, making a great fire to extinguish that of the place and to cover their workmen, and throwing a quantity of Shells in the night towards the Batteries of the Besieged, to prevent as much as possible their disturbing the Workmen with their Fire-Balls.

The Besiegers may make use of these Fire-Balls, if they please, as well as their Enemies, to point their Guns in the night, where they think proper.

The Besieged perceiving their Enemies have found a way to make their Fire-Balls useless, and consequently their Cannon too, in a great measure, during the night; and that all their endeavours could not prevent the Besiegers putting both their Cannon and Mortars in Battery, as well as considerably advancing their Trenches, ought not to think obstinately of opposing Cannon against Cannon, for two reasons; first, because their own must certainly be dismounted in a very little time, and rendered unserviceable for the whole Siege, (the weak always giving way

way to the strong) whereas, if drawn off in good time, they may be more usefully employed on future occasions. Secondly, in order to prevent the entire ruin of their works, every body having observed as well as myself, that the Besiegers instantly cease firing on those parts which do not immediately incommode them, without troubling themselves about what may come from thence afterwards.

The Besieged, in the mean time, to annoy their Enemies, may mount their small Pieces on their Out-works, and on the faces of their Bastions, aslanting or traversing them obliquely, that they may be less exposed; and wherever, in general, they have a view of the Batteries and Trenches of the Besiegers, and are themselves unseen of the former, and may shift their places often to embarrass them. If they'll take my advice, they shall carry some as far as the Angles of the Counterescarp, placing them at a little distance, where they may see something of the reverse of the Trenches and of the Batteries. I am very sensible this is not the practice at present, from an apprehension, very ill grounded, of losing their Cannon; as if it were more honourable to deliver them up by capitulation, new as from the Foundry, than to lose them in an obstinate engagement,

gement, in which the hazard the Besiegers run is incomparably greater than that of the Besieged; the former having a long way to march, exposed to all the fire of the place, while the latter attend their coming behind their Parapets, and choose their marks at their ease*. Besides, the Cannon may be drawn off and secured at the beginning of the night.

The Besieged should likewise take care to repair those parts from whence they were obliged by the Enemy to draw off their Cannon, and afterwards to remount them on the same places, ready for service as at first, as soon as the Enemy shall have drawn off theirs, in order to advance them nearer. I would likewise recommend sea Carriages for all the Guns of a place, in time of siege, as affording less mark to the Besiegers, and not being so easily dismounted.

As to any diversion the Besieged may propose to make in the night time to obstruct the carrying on of the Trenches, it may be done by little parties of eight or ten chosen men, who creeping upon all four towards the works, may give an alarm, with

* One Cannon which the *Turks* carried off at *Candie*, from above the Breach in the Bastion of *Sablionniere*, cost them 1200 men, with very little loss to the Defenders. *Mons. de Kilmanseck* commanded at that post.

crying,

crying, Kill them, Kill them, throw a few Grenades, and then secure their retreat; it will give a pretence to the workmen (who desire no better) to fly, without any possibility of stopping them, or getting them together again that night; which by this means will be lost to the Besiegers. If the latter, when accustomed to these small parties, take no notice of them, and have found the secret, yet unknown, of encouraging their workmen to stand; the Besieged observing this, after sending out some of these small parties, should order a strong one to follow, which not being expected, will overturn their works, workmen, and those who cover them with ease, and then retire within their Pallisades, satisfied with striking terror into them, without persisting to engage, for fear of drawing very soon the whole Trenches upon their backs. By this means they will be themselves out of danger before the Detachments can march out of the Trenches.

The Besieged ought to observe the same cautious conduct for fear of having their Sorties cut off, till the Trenches are advanced within twenty or thirty paces of the Pallisade, from that time forwards no longer apprehending such an inconvenience, and having their Cover'd Way, and all their works

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works to assist them, they ought to attempt something more considerable, either to level a part of the Trenches, or to nail the Cannon of some Batteries, or in short to do whatever their own resolution, seconded by a little good fortune, may prompt them to; but 'till then prudence will allow their taking no other measures than just to give an alarm, overturn what comes first in their way, and then to make a wise retreat. Immediately after one of these Sorties, while the Enemy are still in disorder, they should be sure to throw some of their Fire-Balls amongst them, at the same instant making a general discharge upon them with all their Cannon, which in the night time may be disposed before-hand in convenient places for such an occasion, taking care that those at Barbet be drawn off before day, not to stand exposed to the Batteries of the Besiegers.

The Besieged may likewise to chicane their Enemies, place a number of large Casks or Gabions in a row, from the salient Angle of the Counterscarp, for thirty or forty paces outwards towards the country, so as to enfilade the Trenches in the morning, and prevent any working there that day, perhaps to raze them entirely, or that part of them within reach, if it shall be thought proper. Behind these Casks or Gabions they
may

may place either some Musqueteers, or a small piece of Cannon, which the Enemy durst not attempt the making themselves masters of it, without running the hazard of being cut to pieces: But to do what I now propose, I take it for granted the Besiegers have no Embrasures on that side.

The Besieged must take care to fill those Casks or Gabions with combustibile matter, to burn them if the Besiegers should attempt to seize them, removing that next the Pallisades with a Halbert, for fear the fire should catch hold of them, remembring likewise to order the men posted behind this kind of Traverse in the day, to retire before night, that they may not be exposed.

An opportunity for putting what I now speak of in practice, can hardly ever be wanting, because the most skilful Engineers always observe to direct the Trenches as near as possible to the falliant Angle of the Counterescarp, so they be not enfiladed by it, to shorten the labour which otherwise would be lengthen'd considerably in making many turns.

The Besiegers, on their part, ought to take care to repair the damage done by the Sorties of the Besieged, and to hearten up their workmen again as well as they can: To bring this about, after sending out a party, with orders to lie on their faces, five or six
of

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of that party are to be detach'd to about fifty paces distance from the rest, and as far from one another, with orders to fire their pieces upon the first appearance of a Sortie; that alarm will give timely notice to the Detachments to prepare for their reception, and to the Battallions either to surround them if they should make an obstinate resistance, or otherwise to repulse them with ease; it will be proper that the Engineers should take the pains of showing this disposition to the officers who have the charge of the works before hand, that the latter making the workmen sensible of it, they may inspire them with so much resolution as not to run away at the first noise. As nothing is more common than for the workmen to take to their heels, the only remedy I could ever find for it, in the eighteen or twenty sieges where I have been, is to set but a small number of them to work at a time, not more than fifteen or twenty, under the care of an Officer or Serjeant, who should make them keep a strict silence; when those have laid their Fascines and are fallen to work, to send as many more after them; and in this manner to proceed till all is traced out that is proposed to be done. If, after the work is once sketch'd, a pannick should happen to seize them, the Pikemen of the Battallions of the Trenches will finish
it

it without losing more time, or being obliged to send for other workmen from the Camp. A Serjeant must likewise be left with some men to scout the Trenches, and drive the Run-aways back again.

If the Besieged should think proper to replace those Cannon which the Besiegers had obliged them to draw off, the latter must content themselves with endeavouring to dismount them again with Shells from their Mortars, it not being possible for them to have Cannon in all places to oppose the Enemy where-ever the others shall think proper to bring theirs against them; however, the Trenches holding good, and the parts of them most exposed being in a manner deserted by the Troops being all together at the Head, the greatest mischief the Enemy can do, is the killing a few horses of the Train, for which too there is an easy remedy, in making the Trenches very wide, and with * easy turnings, that all the Carriages may have room to pass, and by taking care to leave a space not less than two or three Toises wide at the extremities of the branches, that they who return from the Head of the Trenches may be able to get in there, and leave the passage free for others, as well as for the Materials.

* This has been done at many places; particularly, at the siege of *Luxembourg*.

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Having now, I think, spoken nearly of every thing that is to be done on both sides, either by the Besiegers for the carrying on of their works, or by the Besieged to obstruct them, and repetitions being tiresome, as the same, or very near the same things, may and ought to be put in practice from the beginning of the Siege to the end of it, I shall pass from the first to the second, and so on to the third or fourth Parallel, if so many shall be thought necessary, tho' in my opinion three may be sufficient. I shall not pretend to determine in how long or short a time things may be so far advanced, as that must depend intirely upon the skilful conduct of the one, and the obstinate resistance of the other. I shall only suppose, as may naturally be expected, that the Besiegers, by their steadiness and resolution having surmounted all difficulties and obstacles which the Enemy could hitherto possibly throw in their way, are at length advanced as far as that last Parallel which takes in the front of the Attack, and which is usually no more than 30 or 40 paces distant from the Pallisades, being design'd for the chief Place of Arms, where the Troops are drawn up for the Attack of the Counterscarp and works adjacent, if they are of Turf, and the Ditch has no Revetement.

As

As this is one of the most dangerous actions in the whole Siege, the Besiegers are to prepare themselves for it with taking all possible precautions to insure the success; for which purpose this last Parallel or Place of Arms is to be made considerably wider than the rest of the Trenches; Banquetts must be rais'd, or an easy ascent made with a large Slope or Talus, that the Troops intended for the Assault may march out in order of Battle; in the mean time a vast quantity of materials of all sorts must be got ready for making the intended Lodgment, which are to be stow'd on the Reverse of the Place of Arms; and in the places nearest at hand, as many workmen as shall be judged necessary are to be ordered for this service, and all the Grenadiers of the Army, or a very strong Party of them, who besides their Grenades, are to carry Hatchets to cut their way through, wherever the Cannon has not done its part. The Grenadiers are to be sustain'd by other Detachments, and these last by the Battalions upon command, all to join in the Assault, in case of an obstinate resistance.

Matters being thus disposed, they wait only for the Signal to begin the Assault, which is commonly the firing so many Guns of a particular Battery: But before all these preparatives it will be proper to know whe-

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ther the Counterscarp is Mined or not, either from an exact Plan which the Besiegers ought to have of the Place, or from the information of Spies, Deserters, or Prisoners; likewise, whether the Mines lie very far forwards in the fields, whereabouts they are; and lastly, whether they are deep enough in the ground, to produce any great effect. Being well informed as to these particulars, and finding it all Mined, the next step to be taken, in order to make all sure above ground, is to take possession of all beneath; for which purpose Shafts must be sunk in the Place of Arms, at three or four Toises distance one from another, and eighteen or twenty feet deep, if it is possible to go so low without meeting water, and planks laid over them on that side where a free passage is intended to be left for the Troops. From the bottom of these Shafts Galleries five feet high, and three feet wide, must be carried on towards the Pallisades, in order to meet with those of the Enemy. If you find you are above the Enemies Gallery, which is easily known by thrusting a long Iron-bore into the ground downwards 'till you meet with no resistance, after opening a way down to it, you make yourselves masters there by throwing of Shells into it; if you find you are underneath their Gallery, you have no more

to do but to blow it up; but, if you should chance not to meet with any of them, which may easily enough happen, in that case small Branches from twelve to fifteen feet long must be carried out to the right and left of your own Galleries, and Fourneaus sprung at the extremities of those Branches, the burst of which will not fail to meet with and ruin the Galleries of the Besieged.

What I am now speaking of, is, supposing the Ditch to have a Revetement; where that is not the case, without more ado a small Detachment may be sent directly to the Pallisades, making a great noise to oblige the Besieged to spring their Fourneaus; which they will not fail to do, lest the Besiegers should get the possession of them. When the foremost are once got into the Ditch, those next the Pallisades will be in little or no danger from the Mines, whose effect will be spent behind them; whereas, on the other hand, where the Ditch has a Revetement, such a way of proceeding would be both idle and desperate, as the Besieged would be under no fear of their leaping into the Ditch to make themselves masters of the Gallery; it would therefore be only destroying men to no purpose.

Another method which the Besiegers may take to preserve their men, supposing they have first destroyed the Enemies Fourneaus,

as

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as before mentioned, on the Glacis, * is to raise Cavaliers in the Place of Arms, or a little behind it, high enough to overlook the Reverse of the Cover'd Way, and placing either some small Cannon or Musqueteers there, drive the Besieged away, without striking a Blow; under Cover of these Cavaliers, and the Trenches together, it is possible to make a Lodgment on the Palisade without much danger, either by Demi-sappe, or by sending small Parties of eight or ten men at a time, carrying Gabions along with them, to be the sooner under Cover, and to proceed in this manner till the whole Lodgment is made secure, which must be compleated afterwards.

If the Besiegers think the way I am here proposing too tedious, after preparing things in the manner before spoken of, and the Signal is given for the Attack, let the Grenadiers and other Troops ordered for that duty, march out of the Place of Arms in order of Battle, and give a general Assault. 'Tis very difficult for men to withstand such sudden and vigorous Attacks as we

* The *Turks* raised one at *Candir*, which commanded the Bastion of *St. Andrew*, and killed a great many men; there were ten pieces of Cannon upon it. There were likewise two small ones at the Siege of *Luxembourg*, at the Attack upon the right, which drove all away from the Cover'd Way: There were only Musqueteers upon them.

have

have been accustomed to make in these last wars ; at least, we have seen no instance of it except at *Mastricht* and *Ypres* : But there, indeed, so little was done, they ought not to be accounted as precedents.

I shall now suppose, or rather take it for granted, that the Besiegers overturning all before them, will make themselves masters of the Counterscarp, and of the works adjacent, if they are of Turf, as I said, and the Ditch has no Revetement, which will soon be known at the Trenches by the joyful shouts of the victorious, on finding themselves masters of the Attack. The Besiegers hearing that cry, should march out every one with their workmen, some appointed to make the Lodgment on the Pallisades, others those on the works. The easiest work, in my opinion, of the whole Siege (accidents excepted) is the Attack of the Counterscarp, where the Pallisades are set after the *Spanish* manner, upon the Parapet of the Cover'd Way, which intercept half the fire of the place, and give the workmen an opportunity of making their Lodgment with ease, tho' the Soldiers, naturally stupid, neither know what they are doing, nor whither they are going ; but, at that juncture, there being nothing more to be done but to go forwards, they follow their Engineers and their Officers, 'till running
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their head or stomach against the Pallifade, down drops the Fascine at their foot, and thus the Lodgment becomes traced out, which is afterwards perfected without difficulty by the skill of the Engineer. There are some other nations besides the *Spaniards*, where one finds abundance of easiness in making a Lodgment on their Glacis, where meeting with little or no Talus, and the Parapet of the Cover'd Way very high, all the fire from thence passes over the heads of the Besiegers; whereas, were the Glacis formed of an easy even slope, it would be the bloodiest spot in the whole siege.

The Lodgments on the Counterscarp should have a Communication with the Place of Arms by wide and open Branches, having the earth thrown up on both sides of them, tho' sometimes one side may be sufficient, according to the places from whence they are seen.

While the Lodgment is making on the Counterscarp, the rest of the Engineers and workmen, appointed for making those on the Works, set out upon their business; if it is a Hornwork, they make their Lodgment against the Faces, Flanks, and Curtain, for two reasons; first, because the Parapet itself serves them for a Lodgment, and such a Lodgment as is made without much danger,
and

and easy to be maintained on account of its near neighbourhood to the Ditch, which latter being quite out of sight from any part of the Place, serves them for a Place of Arms. Secondly, because in making a Lodgment upon the Work itself, you meet with a very hard ground, and a great deal of difficulty to get in to it, which occasions the loss of abundance of men, being all that time openly exposed to the whole fire of the Place; and in effect, you are as much masters of the Work, when lodg'd at the foot of it, in the manner I have been speaking of, as if you was farther advanced upon it; and this too with little or no hazard: Besides, that from these first Lodgments you may go on by Demi-sappe, to the very brink of the Ditch of the Place without losing two men.

The Attack of these kind of Works ought to be made in the day-time, there being much less fire to be sustained here than at any other, having only itself to defend itself, besides the advantage before mentioned, of the Besiegers having the Ditch for their Place of Arms, enabling them to maintain their Lodgments with ease, and to repulse any Sorties the Enemy may make to endeavour to recover their work; for which reason I repeat it, these Attempts succeed better by day than by night, when

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there is no extraordinary danger, as you see much better what you are about, and as numbers, who would make no scruple to skulk in the night-time, in the day durst hardly think of it.

The Ravelin, on the other hand, ought never to be attacked but in the night, being so perfectly well defended by the body of the place, its Angle the very mark of the Cannon of the Besieged, and where they have their Enemies in full view from head to foot, so much to the disadvantage of the latter, that they sometimes miss their blow by it, and lose abundance of their men, especially when they have a little too far to march to the Attack *. Whereas, in attacking it by night, these inconveniencies cease, as the Besieged firing almost at random, do much less execution; while the Besiegers, favour'd by the darkness, can with less danger carry their Lodgments on to the point of the Work; which Lodgments, to be the sooner made, need only take in three or four Toises on each side, and may be carried on afterwards by Demi-sappe to the Ditch-side at leisure, after the same manner as was done at the Horn-work.

* This was the occasion of the Besiegers failing in their attempt upon the Green Ravelin at *Cambray*, and losing abundance of men.

This

This Lodgment must have a Branch of Communication with that on the Counterscarp, which the workmen will not be long making, the Engineers setting them to work in a file, from the Salliant Angle of the Ravelin down a-cross the Ditch, and up again on to the other side to the Lodgments on the Pallisade.

These Communications ought to be wide and open, and steps made in the sides of the Ditch to go up and down with ease. In the Plan at the end I shall only place a Ravelin before the Curtain of the Horn-work, marking the Lodgments on those two different Outworks, which may serve for examples to make others by, on works of the same kind.

If the Ditches and works have a Revetement, as I take it for granted in a Place of importance, the Besiegers must be content with making their Lodgment on the Counterscarp, since they can get no farther, and there must strengthen themselves. When that Lodgment is perfected, a way is to be carried on by Sappe through the Parapet of the Cover'd Way to get to the Ditch-side, always observing to direct those Sappes to the doubling of the Parapet of the work adjacent; that is to say, to the thickness form'd by the conjunction of the two Parapets at the Salliant Angle of

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the work, that it may not be enfiladed by any part of them, but to go there without danger. When that is done, the next business is the Descent of the Ditch, which may be done two or three different ways.

The first is this, * After taking the depth of the Ditch with a plummet or stone fastned to the end of a line, to take the distance from the Ditch-side to the place where you propose to begin the Descent, and forming a right-angled Triangle with that depth and distance, you see how much the Hypothenuse, which is supposed the Descent, exceeds the Perpendicular or depth of the Ditch ; for example, if it exceeds six feet by a third part, the Miner must go two feet down in every six forwards of his Descent ; if it exceeds eight feet by a half, he must go four feet down in every eight ; and so of others in proportion. If, on the other hand, the Perpendicular or depth of the Ditch exceeds the distance I have been speaking of, that doth not alter the proportion which the Hypothenuse may bear to the two sides, it being equal on which ever side you choose to erect the Perpendicular, because the two together make a Right Angle ; by ob-

* They took this method at *Dole*, at *Cambray*, and at *Fribourg*.

serving

serving these measures you will find yourself at the bottom of the Ditch, when you would break through the Revetement.

But as this method is intirely geometrical, to which science few people apply themselves, I shall shew two or three other ways of making the Descent of the Ditch.

The first is to make the Sappe very wide, throwing up the earth on both sides and covering it with thick planks as fast as you go on, to keep off the Grenades or Stones thrown from the Bastion, and, when you find yourself upon a level with the bottom of the Ditch, then to break through the Revetement. †

The second way is still easier, supposing you are out of sight from all parts of the place, because you have nothing more to do but to carry on the Sappe to the border of the Ditch, there to make a way down, either with steps or an easy slope, 'till you are upon a level with the bottom of the Ditch, and then to break through the Revetement ; * if the Ditch happens to be cut in a rock, the course in that case to be taken,

† *N. B.* The depth must be taken with a plummet or stone, as above mentioned.

* This way was followed at *Luxembourg*, in three or four places.

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is to endeavour to get as far as you can into the rock upon the Ditch side ; 'tis no matter what depth the Ditch is of ; suppose it 30 feet, and that the Miners, by being frequently relieved, have made their way six or seven feet down, in seven or eight days time ; this is not to be done without trouble, when the rock is very hard ; but nevertheless, it is to be done by the force of Pick-axes or Chissels ; when they are got in thus far, two Fourneaus must be made, one on the right hand, and the other on the left, observing that each of them are at something a less distance from the side of the Ditch, than from the surface of the ground, 'tis a general rule in mining, whatever you would blow up, always to weaken the part, by leaving the least resistance of earth on that side where you intend the Mine should take effect, the Powder always finding out and forcing the weakest side.* These Fourneaus being charg'd, a great quantity of sacks full of Earth or Fascines are to be thrown into the Ditch under them ; there is no fear of the Besieged's either attempting to carry them away, or to set them on fire in the day-time, which is the time for this business, not only as they ought to be enfiladed by

* In this manner the Descent of the Ditch was made in the Attack of the first Redoubt at the siege of *Luxembourg*.
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the Lodgment on the Angle, or Rounding of the Ditch; but as the Fourneaus once coming to spring, they smother the Incendiaries, Thieves and Fire too, in the same instant; and the effect of them, join'd with the materials which were thrown into the Ditch, together make an easy descent.

Where the Ditch is cut in a rock the body of the place may be supposed to be built on the same foundation; I have hitherto seen the whole world embarrass'd on meeting with such situations, either from the difficulty of fixing the Miner, or of his making his hole in such hard matter; or, lastly, from the length of time required to carry on his work so far as to produce a good effect. I shall now endeavour to make that matter as easy as the Descent of the Ditch.

For which purpose, and to make a sufficient Breach without either the assistance of the Miner, or being obliged to make the passage of the Ditch: Let a Battery of seven or eight pieces of Cannon be rais'd on the Brink of it, to batter in Breach from the highest part of the rock, upwards to that of the wall, that the rubbish of the brick Revetement, and the earth falling together, may make a mount easy of ascent, itself as high, or perhaps higher than the rock. If the Battery continues firing, there will soon be
no

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no occasion for the Miner, and you may proceed to the Assault : But, if you would have the Breach made more considerable first, and the Parapets carried all away, the Miner will easily get in amongst the rubbish which the Cannon will have made, working his way through the more easily, as the Besieged will have no suspicion of him, thinking themselves out of all danger from Mines by their situation : So that, as far as I have observed at the many Sieges where I have been, I have found rather less difficulty in attacking a Place built upon a rock, provided that rock did not run up too high, than where there was none at all, supposing an equal skill in the Defenders, because all the Chicanery of the former can at most extend no farther than the Counterscarp ; whereas there is no end of that of the latter, till the place is taken.

When the Miners of the Besiegers are got above the rock, and working into the rubbish there made by the Cannon, as I said before, to prevent their being overheard, they may make use of such tools as I saw used at *Candie* ; they were a sort of Augres two feet long, and ten or twelve inches broad, with hafts proportionable like other Augres : These tools make no noise in boring, and bring away a pretty good quantity of stuff with them, as often as
drawn

drawn out, by means of which tools and a little patience the Besiegers may very well contrive to spring some Fourneaus amongst their Enemies who are there above them * notwithstanding any Gallery which the Besieged may have in the same Bastion underneath those Fourneaus, without either of them knowing where the others are, 'till 'tis too late; those in the Gallery who are undermost, if they should even over-hear the others, will not dare to spring their own for fear of laying their place open; but they will not be able to prevent those above them from charging and springing theirs too, if they think proper, before they can possibly get at them: The different ways of making the Descent of the Ditch having carried me a little too far, it is time to stop now, to shew what the Besieged ought to do to make a good defence of their Counterscarp, and check the rapid progress of their Enemies.

The Besieged ought to look upon the loss of the Counterscarp, as the prelude to that of their place, and to prevent and keep

* By this invention the *Turks* at *Candie* found means to spring four Fourneaus, in the left Face of the Bastion of *St. Andrew*, under the feet of the Besieged, which buried 400 of their men, notwithstanding their Gallery in the rock: They made an Assault afterwards, which lasted five Hours.

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it off as long as possible, should even surpass themselves in vigour and in chicane, putting every thing in execution, supporting resolution with policy, and policy with resolution : As this is what they ought to have expected from the beginning of the siege, I will suppose them prepared to make a vigorous defence. But not to confound things, I shall endeavour to shew, in order, all the several stratagems which the Besiegers may play both on the Covered Way, on the Glacis, which should be mined, and on the rest of the works ; and which being introduced or seconded with a few hardy Blows, will not a little embarrass their Enemies.

To begin with the Counterscarp, I would have Arrows at all the Angles of it ; these are little advanc'd works about eight or ten Toises forwards in the field, which hold about fifteen or twenty men in the heads of them, the Parapet of which must be palliaded as well as that of its Communication with the place, in the very same manner as that on the Covered Way * ; you may put Rampart Musquets, and little Stone Mortars there, to fire into the Trenches con-

* They had these Arrows at *Candie* at all the Angles ; and at *Tyres* on the side of the Attack, which gave the Besiegers a good deal of trouble.

tinually

tinually, and sinking shafts there, may carry on Galleries and Spring Forneaus very forward in the field. Another advantage they will produce, will be, obliging the Enemy to go on fair and softly, and to have a long way to march to attack the Counterscarp, which is the most dangerous thing in the world for the latter, as by this means they will be obliged to undergo a great fire, and their numbers be considerably diminish'd before they come at the Place.

Besides these Arrows, I would have a double row of Pallisades on the Covered Way, but not to be set up till the Besiegers are just ready to attack the Counterscarp, that they may not be apprised of them. These first Pallisades ought to be two feet lower than those next the Parapet of the Covered Way, to afford no mark for the Enemies Cannon, nor intercept the fire of the Place, and to prevent the latter from making their Lodgment with so much ease as when they are set on the top of the Parapet, as I have before observed; and, lastly, to put them out of conceit with leaping upon the Covered Way.

In setting these Pallisades, care must be taken to set them in a right Line with the former, at 5 or 6 feet distance behind them, in such a manner that the Soldier behind

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may fire through the intervals of both without difficulty ; and between the two rows of Pallisades there must be a small Ditch made, a foot and half wide, and three feet deep, to prevent the effect of the Grenades.

I could wish likewise, that the Covered Way were made with something of a slope, and with another little Ditch in the middle of it, like that I have been speaking of, that the Besiegers Grenades might roll down that slope into the great Ditch, without incommoding those behind the Pallisade, which would make the Soldier stand his ground firmly, when once he understood the affair.

In the Glacis, at six feet distance from the Pallisade, the Besieged may lay Caissons or Powder-boxes at every two feet distance, and buried six or seven feet in the ground ; * these are small Coffers two or three feet long, and a foot and a half wide, to fire whenever you please, by means of Saucissons, conducted thro' little wooden Troughs, or Gutters, laid from the Covered Way.

As to those second Pallisades I was speaking of just now, in the Place of Arms, opposite to the Attack, I would have a kind

* These Caissons were of great use at *Candie*, where the ground was so good, that the same spot would serve for one of them twenty times following.

of Parapet built, of the thickness of two or three Turfs, to cover those who are behind to defend them. Instead of Turf, you may make use of kneaded earth, mixing it up with cut straw, and shaping it like a large Brick, by means of a mould twelve inches long, eight broad, and six inches thick *.

If you would have those Places of Arms secured in such a manner as to be quite out of all danger from a surprize, and in a condition to dispute both the Counterscarp and Covered Way much longer, you must make good Lunetts in them, which are properly speaking good Redoubts, well lined with brick, and capable of containing a hundred or a hundred and fifty men, with a Covered Way round about them, which may serve for a second fire to the two neighbouring Branches of the Counterscarp; these Lunetts or Redoubts must be sunk in the ground, after the manner of those I have seen at *Luxembourg*, at *Breda*, and other places; for their fire to graze the Glacis the better; and that they may be the less exposed to the Cannon of the Besiegers. If they are made after this manner, it is not possible for the Be-

* They made use of nothing else at *Candie*, for all the Parapets of their Retrenchments and that behind their Palisades.

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siegers to make themselves masters of the Counterscarp before these are taken; because with the help of these Redoubts, it will be easy for the Besieged to raze the Lodgments which the Enemy shall make on the Pallisade, as often as they please, to the great expence of the Besiegers, both of their time and people; and by which means, they will be obliged at last to attack these Redoubts in Form, with the Cannon and the Miner, which can only be done by gradual approaches.

I should have enlarg'd farther on this head, but that all men who have seen any service must be sensible of their usefulness; however, I cannot forbear to add, that without the assistance of these Redoubts it is not possible to maintain a Counterscarp after the manner it is attack'd now-a-days, and exceeding difficult to recover it, or so much as to make a Sortie after the Enemy has once got Possession of it: Besides, that what Sorties the Besieged can make will be with great danger to themselves, as they will of necessity have far to come, and may be intercepted as often as the Besiegers shall please so to do.

Besides these Caissons or Powder-boxes before spoken of, Fougassies may be prepared under the Parapet of the Covered Way eight or ten feet deep in the ground,
and

and eighteen or fifteen feet forward on the Glacis.

A Fougasse is a Mine of a smaller kind, which is made use of to burst the Enemies Gallery, and to smother them where there is but little depth of ground, as in these rencounters, the entrance into them should be on the Covered Way. The Galleries which have their entrance at the bottom of the Ditch, ought to have many Communications with the Principal or Master Gallery; the property as well as usefulness of which former, consists in its being always parallel to the Revetement of the Ditch, and ten or twelve feet under the Covered Way. That Gallery is an almost inexhaustible source of chicanery, running all round about the Place. After the Besiegers have made themselves masters of one part of it, the Besieged may make use of the parts which remain to blow them up; and it is for this intent that so many communications are necessary, that if any of them happen to break in, or to be taken by the Enemy, there may be other ways still left to pass.

Every one of these Communications should be enfiladed, as much as is possible, by some part or other of the Place, to prevent the Besiegers making use of them for the Descent of the Ditch; and from this Gallery
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or Parallel a number of Branches are to be carried out as far forward as possible under the Glacis, as you will see in the plan which follows, from which Branches, others must be made to issue out upon the right and left, with Fourneaus directly under the Pallisade, which Fourneaus are to be kept always in readiness for charging, in order to blow up the Lodgment over them, whenever it shall be thought proper ; and when all attempts to overthrow it by hand, have proved ineffectual. To prevent the water standing in those Galleries, they should have a small declivity given them towards the Ditch, that it may run off that way, and neither make it slippery under foot, nor occasion the falling in of the Gallery.

Besides these several Mines I have been speaking of, I could wish the Besieged to make a Gallery which should run all round about the Bastions and the Works, at fifteen or eighteen feet distance from the Wall, as you will see in the plan before mentioned, and to dig it as deep as it is possible with-
meeting water. The Besieged should consider this Gallery as their last resource, after their Covered Way is taken, and all their Souterrains are become useless by the great number of Fourneaus which themselves and their Enemies have sprung on the
Glacis,

Glacis, because from this Gallery, at the bottom of the Ditch they can convey themselves under the Lodgments and Batteries which their Enemies have made on the Ditch-side, either to blow them up, or to recover them and make a new Lodgment for themselves there; and lastly, to defend the passage by blowing up one after another, when all Efforts have proved vain, to repulse them with blows; but in regard to this particular, the Besieged must be careful to spring those Fourneaus first which are forwardest, in order to keep those clear which are behind, and not to lose the benefit of them, nor make their Galleries useless but step by step; whereas, by not observing this conduct, but springing the second or third before their time, you would find the passage to the foremost choak'd up, and the Gallery broken in.

As to the Galleries within the Bastions and the Works, I would have them made behind the Wall, and not in the substance of the Wall itself, especially when it may be seen to the very foot, and stands all exposed to the Cannon of the Besiegers on the side of the Ditch, because, in half a dozen shot they will burst the Gallery, and fill it with rubbish; and, when that is done in three several places, at eight or ten Toises distance each, the Miner, whose hole is

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ready made in the middlemost, will get in there without fear of the Enemy, * who will not be able to get at him, their passage being stopped up, as I said, by the rubbish of the Gallery; the Besieged must have a way down into this Gallery, by three small winding stair-ways, whose entrances are to be underneath the Parapet.

If the Besieged make Retrenchments within their Works, as they ought to do, they must be all countermined, as is before advised.

† Tho' I have seldom met with a second Counterscarp, except at *Luxembourg* and *Arras*, and do not at all approve of them, because of the extraordinary Garrison required to defend them; I shall not, however, omit to mention what I think might be done, to make them a little less faulty than they are at present; I would have, therefore, in order to support those places so far advanced in the Country, that besides the sunken Redoubts, which ought to be at the Salliant Angles, there should be

* This happened at *Dole* in the time of the last Siege, at the Attack upon the Right, where after bursting the Gallery in three places in the Face of the Bastion, the Miner was afterwards affix'd to that in the middle.

† It seems difficult to guess at the Author's meaning in some parts of the following paragraph; however I have rendered it as literally as I could.

a. Communication of Pallisades carried from each of the Angles of the first Counterscarp to those of the second, which forming different Quarters, would put the Besiegers out of conceit of throwing themselves in there, unless they should choose to put themselves betwixt three fires, to no other end but to be cut to pieces; whereas that first Counterscarp is not to be maintain'd without those Pallisades, serving for a Communication, as I said; because, if there are no Redoubts, and it should be vigorously attack'd in many places at the same time, the Besiegers throwing themselves in there, as they would certainly do, would cut and hack to pieces between the two Counterscarps all those who were intended to defend the first; which might probably, in the event, be the loss of the Place. Besides, when that second Counterscarp is taken, it furnishes the most convenient Place of Arms in the world, to the Besiegers, secure against all Sorties; and from whence, whenever they please, they may go to attack the other. I know very well, that to this may be objected, the distance made by a Redoubt at *Luxembourg*; but the objection will cease, when it is known how ill it was attacked; and that, if, instead of battering it four Hours with Cannon, they had the first day cut off its Communication with the Cover-

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ed Way by a Trench, it had been taken the same night, which they were forced to do five days afterwards. * At all events, whenever this happens to be the case, care must be taken that it be well provided with Caissons and Fourneaus, as I have advised for the other Works.

The Besieged having ordered every thing in the manner I have spoken of, and finding that their Enemies, after compleating their Place of Arms, are preparing to come and attack them, to save their longing, should go and attack them first, while they are in least expectation of them, choosing the day-break, or a little earlier, for that purpose, in order to surprize them and find them either asleep, or tired with the duty of the night: That Sortie should be a vigorous one, and attended with a good number of Workmen to level the Trenches as fast as the Besieged go on; which last being no longer in danger of being surrounded (or intercepted in their Retreat) may now stand it out with a good deal more obstinacy than at other times, to give their Workmen time to execute what was given them in charge; and which they will soon accomplish with ease enough, there hav-

* This advice was given to Mons. *de Vauban*, which was approved of, but not followed.

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ing never yet been an instance of the Head of the Trenches sustaining themselves against a vigorous Sortie.

The Besieged then having succeeded in all they proposed to do, or in part of it, will make their Retreat to the side of their Pallisades as wisely, and with all the advantage they can ; and as it is apparent, indeed impossible it should happen otherwise, but that they will have the whole fire of the Trenches upon their backs, which will not fail to engage a good many in the pursuit, then is the time for the Besieged to spring their Mines farthest advanced in the Field, which ought to be ready charged for such an occasion. This will strike new terror into their Enemies, and bury some of the hottest in the pursuit.

If the Besieged think proper to face about and take advantage of their Enemies confusion, they may do it without much hazard, and then retire into their Place, making a general fire from all parts with their Cannon, to favour their Retreat, wherever they see any Succours coming to the Enemy ; and after they are retreated, wherever they see them in any numbers. To avoid repetition, what I am now saying is to be observed in all Sorties the Besieged shall think proper to make, within reach of their Covered Way. If those who attack, after
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repairing the damage done by the last Sortie, shall think proper to take possession underneath, in order to secure all above ground, as I observed in speaking of the Attack of the Counterscarp, the Besieged will still have the advantage there too ; because, having their Galleries and Fourneaus ready made, they have only to listen on which side their Enemies are approaching, and to let them come quietly on to a certain distance ; and then, by firing a Fougasse, undo all they have been doing to that time ; so that unless the Besiegers should happen, by meer chance, not to meet with the Galleries of the Besieged, they will not be able to prevent their serving them in this kind. I could rather wish that the good luck or skill of the Besiegers might direct them to meet those Galleries ; the Besieged, who wait for them with the Muzzles of their Pieces, 'tis certain, will be obliged to spring their own Fourneaus, to destroy the others Gallery, rather than stay too long, for fear of being blown up themselves ; but that will still be at the expence of those who first occasioned the discovery, as well as of all above them, attended with a great loss of time to the Besiegers, and of some of their most useful people. However, the latter, by their resolution and conduct, tho' with the loss of abundance of men, having brought themselves under a necessity

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sity of springing their own Fourneaus, will, at last, find themselves out of all farther danger, and in a condition to attack the Counterscarp.

Having now explained myself, as above, concerning what ought to be the Behaviour of the Besiegers, I shall here content myself with shewing what the Besieged ought to do to give them a proper reception.

The first thing the Besieged should observe, is to keep a strict silence, to throw a quantity of Fire-balls in the night, as far beyond the Pallisades as they possibly can, in order to discover the most distant approach of their Enemies, and to choose out their Marks; they should likewise have some Men they can depend upon, either Officers or Serjeants, wherever they propose to spring either Caissons, Fougasses, or Fourneaus, if they have any still left of their forward ones, to prevent the Miners who should give fire to them, either from running away, or springing them *mal a propos*: To give them time, I say, to do this, those who are to defend the Pallisades ought to stand firm and unshaken the first Detachments of their Enemies, as it will not be possible for them at the first brunt to force the double Pallisades yet intire, and can therefore do them little hurt;

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hurt; but, on the contrary, may receive a great deal themselves, being exposed from head to foot to their Enemies, while the Besieged, on the other hand, scarce shew the tops of their hats to them. The Grenades of the Besiegers will likewise have but little effect, if the Besieged have taken the precautions I before advised, which they ought to have done; whereas those of the Besieged cannot fail of the contrary, being thrown in the midst of such a thick body as that of the Besiegers.

The first Detachments of the Besiegers are sustained by the second, and the second, by the Battalions intire, when the resistance is obstinate; then is the time for the Besieged, who it cannot be expected should stand against a multitude of Enemies, throwing themselves upon all the Angles of the Counterscarp (which is the right of the Game) and who have now a view of the Reverse of the Covered Way, to fire their Fourneaus or Fougasses, and their Caissons; and after having given them a close discharge, to retire within their Place, and leave room for the whole Fire of the Place and Outworks to act. Those Outworks themselves ought to be provided with a number of small Cannon, easy to remove for such an occasion, to make a continual Fire during the Attack; which, together with those
of

of the other parts, will pretty well diminish the number of the Besiegers. After they have stood that fire for some time, the Besieged should resolve to make a Sortie to endeavour to raze the Lodgment made by the Besiegers on the Parapet of the Covered Way: If this first Attempt should succeed, they will resume their former Post behind the Pallisades, and there maintain themselves 'till they are again dislodged by the Enemy. In short, they must endeavour to make it good as long as they possibly can, and never cease incommoding their Enemies; but as it is to be supposed that these last, will in the end recover and repair their Lodgment, after losing it more than once, and will fortify themselves there a-new, the Besieged on their side must do the like in all parts of their Covered Way, where-ever the Enemy are not got into possession, and should make excursions on the Besiegers from all the small posts adjoining to the Places of Arms, either to disquiet them, or to give them a small defeat, if fortune favours them so far; by teasing them in this manner, they will at last oblige the latter to come and attack them, and take all those Lodgments inch by inch which are so troublesome to them, which cannot fail but prolong the

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Siege

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Siege considerably, and * cost the Besiegers abundance of men.

However, the latter, by the assistance of time and numbers, having at length made themselves masters, the Besiegers have no other way left them to get their Counter-scarp again, but to blow it up with the Pallisade and Lodgment upon it; and that by means of the Gallery parallel to the Revetement of the Ditch, which I have spoke of before: They may, if they think proper, lodge themselves on the effects of their Fourneaus more expeditiously, by means of portable Pallisades, joined four and four, or six and six together, † with Supporters on the inside; each of which pieces of work should have four Hooks or Cramp Irons to grapple one with the other; an hundred of these Pallisades may be set up in less than a quarter of an hour, when one is used to the manner of doing it, each Range being easily carried by two Soldiers;

* This Conduct contributed not a little to the prolonging of the Siege of *Candie*, where they made ten Sorties in a day from all their Lodgments, which were countermined, and which they lost inch by inch, having blown them all up first.

† By means of these Joint-Pallisades at *Candie*, they lodged themselves above two hundred times under the poles of the *Turks*, without their being able to prevent them.

while

while these Pallisades are fixing to the utmost extent of the Lodgment intended, another Range is to be set up at six feet distance behind the first, to defend them, and prevent their being too easily forc'd.

These Lodgments after being many times taken and retaken, will at last remain the Besiegers; and it is to be supposed they will strengthen themselves there, and bring Cannon to batter in breach the Work over-against them, and to ruin the Defence of the Body of the Place.

As what I might say concerning the defence of the Works in particular, would oblige me to continual repetitions in speaking of that of the body of the Place, and that the Attack both of the one and the other must be very near the same, I shall content myself with only saying by the Bye, that the Besiegers after having made a Breach in the former, will endeavour to carry them at the first blow. But if the Retrenchments, and the resistance they there meet with, prevent them from going on so fast, they will lodge themselves on the spot of which they have made themselves masters, and endeavour step by step to carry the rest of the Work.

The Besieged, on their side, will make good Retrenchments, and defend them to

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extremity : Those Retrenchments and all the rest of the Works ought to be mined, to blow up their Enemies when they find themselves obliged to abandon them

What I might farther say concerning the Attack and Defence of the Body of the Place, ought likewise to be understood of the Works : This being supposed, and the Besiegers lodged where we just now left them, with Cannon on the Counterscarp, they will do their utmost to ruin all the defences, to facilitate their Descent and Passage of the Ditch ; in the mean time those of the Place will strengthen the Ditch with making good Lodgments between the Flanks, either so high in the Front, or so deep in the ground, as not to be seen of the Enemy from their Lodgments on the Ditch-side ; * they may likewise place Cannon in those Lodgments, which, together with that hidden one behind the Orillon, and traversing obliquely those on the Face, will give a good deal of trouble to the Besiegers in their Passage of the Ditch, and prevent the Miner's fixing himself there, as long as those Lodgments subsist.

* Mons. St. Andre Montbrun had ten Pieces of Cannon mounted on one of those Lodgments in the Ditch at Candia, which incommoded the Turks exceedingly in their Passage.

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The Besiegers must defend their Lodgments to extremity, because, when they are once taken, the Ditch is left free to the Besiegers, and they may then fix their Miner where-ever they please; but as those on the inside are on an equal footing with their Enemies as to handy-blows, as they can only attack them with a Front equal to the breadth of the Ditch, and the former may every moment be supplied with whatever Succours they want by means of the Back-door behind the Orillon, it is the Place of the whole Siege where the Besieged may and ought to make the greatest resistance. Those Lodgments should be mined, like all the rest of the works, and Caissons laid in the ground before them, to be fired in the manner of those spoken of in the Counter-scarp.

If the Besiegers should think proper to throw a large body of Troops into the Ditch, to carry it more easily, the Fourneaus, Fougassies, and Caissons springing *a propos*, and assisted with the Fire from above, of Fire-works, Sacks full of Powder, Shells, Grenades, and the small Arms of the Bastions and the Lodgments; all these, I say, together, cannot but produce a strange disorder, and a terrible slaughter amongst those

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those who attack, besides the handy-blows which the Besieged will have an opportunity of dealing to their Enemies, when they find their numbers considerably diminished, in short they are to put all means in practice to defend them, and to consider the loss of them as the infallible fore-runner of that of the Place ; and as they ought to have foreseen that, their Enemies Batteries on the side of the Ditch, must in a little time dismount their Guns, ruin their Defences, raze their Lodgments, at least, in part, and open a way for the latter to make themselves masters of them, they should mind their business and blow them up in good time ; and having now no Gallery left, either under the Covered Way, or under the Glacis, they must have recourse to that at the bottom of the Ditch, and carry out new branches under the Covered Way, to produce the desired effect ; while this is doing, to amuse and baffle their Enemies a little, they may send out small Parties of five or six men in the night, to hearken whereabouts the Besiegers are at work piercing the Revetement of the Ditch, in order to make their Descent ; and where they find the latter have just broke a hole through, give them a Volley with-

within, * and then retire on one side to load again; and as they will run no hazard in this, they may repeat their handy-work, 'till the Besiegers have taken their Post in the Ditch.

In the mean time, the Fourneaus designed for blowing up the Cannon and Mortar Batteries of the Besiegers, on the Ditch-side being charged, the Besieged must spring them; but laying it down as a constant rule, to blow up nothing 'till the last extremity, that is to say, 'till after all efforts, either of Blows or otherwise, have proved ineffectual, because the same Fourneau can have its effect but once. I had the Pleasure at *Candie* to see Lodgments and Batteries on the same spot twice blown up, which the *Turks* had made there, as thinking themselves quite secure the second time; but it was a perfectly good ground, which supported itself without any assistance, and above thirty feet deep; so that by going no farther down than ten or twelve feet at the first operation, you might very well afterwards go ten or twelve feet lower than the first Chambers, and blow up the Lodgments and Batteries of the Enemy a second time: Whereas this

* This was done at the Siege of *Fribourg*, and frightened the *French* Miners to death.

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Gallery being, as it were, just upon the edge of the water, the Besieged have no resource left but to begin another in a fresh spot; they must therefore be careful not to spring the Fourneaus till in the nick of time, because, if the Besiegers should recover their Lodgment, and re-establish their Batteries on the ruins of those Fourneaus, they would be there quite secure for the remainder of the Siege.

The Besiegers, in the mean time, whom we left on the Ditch-side, will strengthen themselves there, by making good Lodgments, and bring Cannon thither, in order to dismount those of the Besieged, to ruin their Defences, and endeavour to raze their Lodgments in the Ditch, to make themselves Masters of them the more easily afterwards, and secure themselves from being blown up again. The Besiegers will likewise sink Shafts in their Lodgments, as low as they can for the water, and from the bottom of those Shafts carry out Branches to the right and left, a little before their Lodgments; by which means they will secure them, and prevent their Enemies approach. From those Branches they may carry out others in the bottom of the Ditch, and spring Fourneaus at the extremities of them, as I observed before in the Glacis, and to the same

same effect as there; that is to say, to destroy the Galleries of the Besieged; besides, by this means they will put the Besieged under a necessity of springing their own Fourneaus, for fear of being blown up themselves, or obliged to quit their Gallery.

The Cannon of the Besiegers will now dismount those of the Besieged, ruin their Defences, and raze, as far as 'tis possible, their Lodgments in the Ditch. If the latter have any Guns behind the Orillon, the Besiegers not being able to dismount them with their Cannon, will throw a large quantity of Shells there, which will produce the same effect. *

The Defences being ruined, and the Guns on the Face dismounted, which as it may be supposed, must come to pass in a little time, the Besiegers after having made the Descent of the Ditch in one of the three methods before spoken of, will prepare to attack the Lodgments within it, taking the same precautions, as at the Works which they have carried before; and will likewise blow up the Revetement of the Ditch, in three or four places opposite to those Lodg-

* At the Siege of *Luxembourg* above six Batteries were dismounted by Shells only, which were out of view from the Cannon Batteries of the Enemy.

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ments, that they may march out all together and attack them in Front; taking care to keep as far off the Wall of the Place as possible, to avoid the Fires thrown from above. With these precautions, the Troops on command will enter the Ditch in three or four Places, and attacking the Besieged on all sides, endeavour to make themselves Masters of all the Posts which the others possess.

If the Besieged stand their ground, as they ought, and as it is to be presumed they will do, the greatest share of the danger will fall to the first Detachments in the Assault, as they will be obliged to endure both the Fires from above, and from the Lodgments, which will oblige the Besiegers to come to close engagement as soon as possible, to put an end to that work, and make their Enemies partake of the brunt; and now resolution alone must decide it: But, as in these Rencontres the Besiegers have the advantage of going out, when they please, to refresh their People, and bring them whatever they want, whereas the Besieged having only a Back-door behind the Orillon, may reasonably expect either to be made Prisoners, or put to the Sword at last in endeavouring to retire, if once the Besiegers get possession of their Lodgment. Things, therefore, not being on an equal footing,

footing, it is but natural to imagine, that Fortune, according to her custom, should declare for the strongest: I therefore suppose, that the latter making themselves Masters either of all the Lodgments, or a good part of them, the Workmen sent with the Engineers, will make strong Holds in them, and fortify them, screening themselves as well as they can from the Fires above, by a Covering made of thick Planks, and will likewise make wide and open Communications between these Lodgments, and those on the Ditch-side; after which, they will either get the possession of those which remain, by some new expedients, or make themselves Masters of them step by step, and after clearing the Ditch, will make good their passage, and fix the Miner.

The passage of the Ditch used formerly to be made by a Gallery of Timber-work, where abundance of people and time was lost, before the business could be brought to perfection; now-a-days, when such tedious doings are out of fashion, and we are grown better husbands of both than heretofore, it has been thought proper to contrive Galleries for passing the Ditch, much quicker, and with less hazard and expence.

I have oftener than once put in practice the two methods I am going to propose,

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and have made use of either, according as the situation of the place and opportunity have served.

The first method consists in placing two rows of large Casks, to be continued from where the Descent of the Ditch begins, to within three or four feet of the Wall ; * which space of three or four feet is to have on one side of it a good Epaulement of Sacks of Earth to cover the Miner, the other side being unseen from any part of the Place, may serve for throwing out the waste earth there, from the Mines, Gallery, and Fourneaus.

These two Ranges must be placed at six feet distance from one another, to give a proper width to the Gallery ; the Casks must be filled with Sacks of Earth, as likewise the Interstices between one Vessel and the other ; and both the Casks themselves, and the intervals betwixt them covered with Planks, to form the Gallery ; as the Planks themselves must be, either with Ox-Hides new killed, or else with Tin ; and if a Covering of Dung is laid over the whole afterwards, it will be so much the safer from the Fires above. This method is so easy, and so secure, that I have sometimes made use of it, in open day, without losing a man. 'Tis true, indeed, that

* This method was followed at the last Siege of *Dole*.
during

during the time I was at work, our Artillery and small Arms never ceased firing, which diverted the Fire of the Place, as well as the curiosity of the Besieged, from attending to what was going forwards in the Ditch. Further, to prevent the Gallery's being burnt by the Fire-works of the Enemy, there must be people always ready with large Iron-hooks to pull them away, as fast as they fall either upon it, or near it.

The second method is still easier, being only to make a good Epaulement for a defence against the opposite Flank, and continuing it a-cross the Ditch to the Wall of the body of the Place, or of the Work where you would fix the Miner *. But this is nothing near so secure as the other; and they who are concerned with the Miners often undergo many tribulations. While the Gallery or the Epaulement is making, half a dozen Planks must be carried and set up against the Wall of the Place aslanting them, that the Grenades or Fire-works of the Enemy may take no hold of of them, and each of those Planks should have an Iron-spike or two at the bottom,

* After this manner the Descent of the Ditch was made at *Cambray*, in several places, the same as at *Luxembourg*, because they were unseen of any part of the Place, and there was no great danger of the Fires from above.

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to run four or six inches into the ground, to make them stand the firmer.

Before the fixing of the Miner the thickness of the Wall intended to be blown up, should be enquired into, and whether the Besieged have a Gallery behind it; if there is none, the Miner may follow his beaten track, breaking through the Wall, and working himself in betwixt that and the Earth, about a dozen feet upon the right and upon the left; at the extremities of each of these small Branches, he must make two Fourneaus, one of them in the Wall itself, the other in the Earth, the latter being carried about fifteen feet forwards, including the Chamber of the Fourneau, to make the Breach the larger and the easier. The Besiegers, if they think proper, may fix four or five Miners along the Face of the same Bastion, who proportioning out the whole length equally amongst them, and afterwards giving fire to all of them at the same time, will make a Breach the length of the Face, without leaving a single stone; they must observe likewise, to carry Galleries in three or four places, as forward as they can, underneath the Bastion, to secure their own Fourneaus behind them, and to stifle with a Fougasse the Miners of the Besieged, when they are coming

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ing towards them. * If the latter should not take that course, the Besiegers may make use of those 3 or 4 Galleries to blow up the remains of the Bastion, and the Retrenchment, when there is one, at the same time with the Face; by which means they will be able afterwards, with greater ease, to carry the whole.

If, on the other hand, the Besieged should have a Gallery behind their Wall, the Besiegers, knowing the Thickness of the Wall, or pretty nearly, must work themselves into it, in two or three places, and make two Fougasses on the right, and two on their left in such a manner, as just to break the Gallery, without laying it in ruins, the Fougasses being so ordered as to have their effect on the side next the Ditch:† But before these Fougasses are sprung, some necessary preparations must be made, in order to the getting possession of that Gallery;

* At *Luxembourg* the Besiegers carried on a Gallery underneath the Bastion of *Barlemont*, which reached as far as the Cavalier, where was a large Magazine, which would have been blown up along with the Face of the Bastion, if the Place had held out twenty-four Hours.

† By means of two Fougasses and four dead Shells, with Fuses, they made themselves Masters of the Galleries at *Dole*, observing the same conduct. And at *Luxembourg*, after bursting the Gallery of the Counter-Garde, they got possession of it with their Grenadiers only, after making the same disposition.

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for which purpose, a large quantity of Sacks of Earth must be laid betimes over the Gallery or Epaulement which leads to the Miner, from the Revetement of the Ditch to the body of the Place, that the Passage itself may be kept clear. The next thing to be done is to pick out ten or a dozen Grenadiers, or the same number of stout Soldiers, with two Serjeants to command them, and the latter to have Fire-arms; each of these Grenadiers must have four Grenades, and amongst them all four or five Shells, three quick, and two dead ones, that is to say, the last not to be charged, but having, nevertheless, their Fuses filled with the same composition as those that are; after these preparatives, and the effect of the Fougassies having opened the Wall, and made an easy entrance into the Gallery, the 2 Serjeants are to throw themselves in there, Sword or Pistol in hand, followed by the Grenadiers, and over-turn or drive all before them: If they meet with no body, the Lodgment will be easily made with the Sacks of earth brought thither before-hand, by handing them forwards from one to the other, till a thick, strong Traverse is made of them a-cross the Gallery. If, on the other hand, the Besieged should come thither, either to recover the part of their Gallery taken from them, or to defend what

what they are still in possession of, which can scarce otherwise happen, the Grenadiers are to throw the three Shells first mentioned amongst them, which will either smother them or disable them, while the Serjeants and those at their heels make their retreat the same way they came in, and find themselves in safety. When those three Shells have had their effect, the Serjeants and Grenadiers re-enter the Gallery, with their two dead Shells with Fuses to them; and if the Enemy return thither a second time to prevent them making their Lodgment, throw them directly in their teeth, which will send them back faster than they came, not choosing to be either smothered or torn in pieces; in mean time the Serjeants and those with them, being under no apprehension from their effects, fall to work at their business, and make the best of the time their Enemies fear has afforded them, making their Lodgments so substantial and pierc'd with Loop-holes, that the latter, at their return, see all their hopes at an end of ever being able to recover their Gallery.

This way of getting possession of a Gallery may be extended to the forcing of all sorts of Posts or Lodgments, where the number of the Defenders is by a third part greater than of those who attack, provided

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you can come up to those Posts so as to throw yourself into them; for if they are well pallisaded, or have a Revetement, there will be no possibility of carrying them without either the Hatchet, the Cannon, or the Miner; but where that is not the case, it is only for the Grenadiers who first fall on to observe the same conduct as in getting possession of that Gallery. *

The Besieged, on their side, seeing all their Lodgments gone which they had in the Ditch, as I have supposed, and in a manner all their Gallery, will betake themselves to the Defence of their only one remaining, behind the substance of their Wall, and will fall to repairing such small parts as are still in a condition fit for service of that near the Water-level, at the bottom of the Ditch, in order to make use of them to blow up the Gallery or Epaulement leading to the Miner, and some other of the Besiegers Posts in the Ditch, after having in vain attempted to overturn them with Blows. I will suppose therefore, that the Besieged not being able to accomplish either one or the other, or, if you please, that having done both more than once, the Besiegers have still repaired them again, they

* The Lines which follow here in the Original, being only a Repetition of this method, I have omitted them.

have

have no other course left but to blow up the Gallery or Epaulement with some Fourneaus, if they have any still remaining, after which the Besiegers re-establishing that work a-new, find themselves secure there for the remainder of the Siege, for the reason I mentioned before, that the same Fourneau can have its effect but once; and that 'tis not possible to make a second underneath the first, where there is so little depth of earth, as in the place I am now speaking of.

The Besieged, therefore, finding themselves unable to discommode their Enemies any longer with Fourneaus, will have recourse to other Stratagems; such as, throwing Shells from the Top of their Walls, directing them as they please, in the same manner as if thrown by hand, which is easily done with the help of a Trough or Gutter made of three pretty long Planks nailed together *; to do this more commodiously, and with safety to the person employed in that service, a Staff must be fastened underneath the Trough behind, with a Hook and Staple, in such a manner, that when the Shell is laid in, and fire given to the Fusée, the Man who serves it, by rais-

* They made use of this Trough at *Candie*, with great success.

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ing the Bottom of the Trough with that Staff, may direct it where-ever he pleases, as if toss'd from his hand, without being seen himself; when-ever this invention is to be made use of, a way must be made in the Parapet for the Person to come forwards to the Wall, for his greater ease in doing it.

Another step the Besieged may take for their own service, is, in the night-time to repair some parts of the Flank or Face of the Bastion, from whence they have a view of the Miner's Lodgment to place a Cannon on a Sea-Carriage there, to demolish it, taking care first to throw a quantity of Fire-balls all round about the Lodgment, to give their Gunners an opportunity of pointing their Guns with greater ease.

As soon as that Lodgment is demolished, those of the Place may let down, directly before the Miners Hole, four or five Shells laid upon a Plank fastned to a Chain, and the Shells with the Chain made fast to Cords; the bursting of which Shells will be a bad entertainment for the Miners and those in the Hole with them.

Besides what I am now saying, the Besieged may set the whole Ditch in a Flame, by means of Wood, Powder and Fire-Works, without any possibility of the Enemies preventing them, and may repeat
their

their handy-work as long as they have any of the above mentioned materials remaining, notwithstanding all endeavours of the Enemy to the contrary. They must likewise remember to make some Cavities in the substance of the Wall, or the Face of a Bastion, large enough within to hold a Man at his ease, but diminishing outwardly to nothing, that he may not be perceived himself, yet see whatever the Besiegers are doing in the Ditch *. But great care must be taken, never to fire from those Holes; for the latter, as soon as ever they discover them, will make them useless with their Cannon. To prevent which inconvenience, a Man of understanding must be placed there without Arms, to observe all the motions of the Enemy, and, more particularly, when they are charging their Fourneaus, which he will easily discover by seeing a number of Soldiers very busily employed, with Sacks full of Powder carrying to some of them, and Wood for Stanchions to others; then is the time for the Besieged to throw into the Ditch whatever may help to set it in a Flame, and neither to spare

* They had above twenty Holes in the Walls of the Planks, Faces and Curtains at *Candis*, by means of which they saw all the *Turks* were doing, and defeated their projects very frequently.

Shells,

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Shells, Grenades, Powder, nor Fire-works, which will create a disorder and terrible desolation amongst the Besiegers. By means of those Holes, you may perceive when the latter retire to spring their Fourneaus, which will give the Besieged an opportunity of retiring on their side likewise, and to prepare for their defence when they come to be attacked.

Having shown in what manner the Besieged are to assist themselves by throwing Fires from above, it will be proper, in the next place, to see how they will defend their Gallery, the only one now left them for their last resource behind the substance of their Wall; instead of expecting the Miner of the Besiegers, they ought, by good right to go and meet him half way; and when there are not above two or three stones remaining to be removed betwixt 'em, should make haste to be before-hand with him, and either shoot him with their pistols, or drive him away, and oblige him to begin his work a-new; whereas, if they attend his coming, till he has made a Fougasse or two, as I observed before, either in the middle, or perhaps two-thirds deep in the Wall, he will, at once, burst the Gallery, and stifle all within; the Besiegers in the mean time will return to their
Hole,

Hole, and there throw a quantity of Shells and Grenades into the Gallery, to drive all away from thence, which the Besieged ought to have foreseen, and made Epaulements a-cross to maintain it, and to shelter themselves behind, from the Burstings of the Shells and Grenades; but as it will not be possible for them to hold out long against the smother (which must stifle them at last, notwithstanding the Vinegar they would take from time to time) they must have recourse to their Air-holes whose vents are under the Parapet, and which ought to be covered with Planks to prevent their being stopped up by the rubbish of the Cannon, as I have known happen when those Vents have been in sight *. Down these Air-holes or Vents the Besieged must throw boiling Pitch and Tar, Gun-powder, quantities of Grenades into the Gallery; in short, whatever may help to fill it with Fire and Smoke, and make it insupportable to the Enemy. In the mean time, if they have any small parts still remaining of that Gallery which they had near the Water-level at the Bottom of the Ditch, they must not neglect them, but make Fourneaus there to blow up the Besiegers as they are mounting

* This happened both at *Dole* and *Luxembourg*, where the rubbish made by the Cannon choaked the Vents of them.

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the Breach to the Assault †. They should likewise perfect their Retrenchments, if that is not already done, which ought to be well fortified with Cannon loaded with Chains and old Iron ; and in short, prepare themselves with every thing necessary for sustaining the Assault, either from behind their Retrenchments or in a close engagement. Which way soever it be, they must take care always to have a great quantity of Materials ready ; particularly Cheveaux de Frize and Sacks of Earth to repair the Breach, in case they should be so fortunate as to repulse the Enemy ; and ought, besides, to be well stored with Grenades, Shells, Fire-balls, Storm-barrels, Storm-rings, Fire-pots ; and lastly, a great quantity of Sacks filled with Powder, all to be thrown from the top of the Breach to the bottom, the moment the Fourneaus have play'd ; they will have all that interval till they are attacked to do it in, which will be time enough to throw a great number of them, because it is usual for the Besiegers to halt for some little time, that they may not be incommoded by the effects of the Fourneaus, and not to begin to move, till the dust blowing over, they can clearly discern the Breach.

† At Candie they sprung 17 Fourneaus under the *Turks* feet, while they were mounting the Breach, and afterwards made a Sortie, which cost the *Turks* abundance of Men.

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The Besieged should pick out some of the stoutest men of their whole Garrison, arming them with Cuirasses, with Scythes, the wrong way hafted, and with Partisans or Clubs headed with Iron at both ends, to stop some of the forwardest of their Enemies, when they are just got to the top of the Breach, and out of breath ; but the Men thus armed must not appear, till the Enemy are advanced within the reach of a Partisan, not to be exposed to the Cannon of the Besiegers.

After making all these dispositions, the Besieged will expect the coming of their Enemies to attack them, with resolution ; and the Besiegers, on their part, will do their utmost to carry the Place by Assault, after first putting their Fourneaus in order ; it will therefore be proper to shew in what manner they ought to be disposed to produce a great effect.

The Besiegers after having made themselves Masters of the Gallery, in the manner before spoken of, will make Traverses with Sacks of Earth, and with Loop-holes in them, one looking towards the Angle of the Shoulder, the other towards that of the Bastion. Behind these Traverses or Retrenchments, they will post Grenadiers, as well to keep the Enemy out as

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to secure their own Miners, and as they are liable to whatever the Enemy shall think proper to throw down those Soupirâux or Air-holes to annoy them; they must stop up their Vents in the Gallery with double Planks, arming them with Tin on one side for a Shield against the Fires from above; and these Planks must be strongly supported. *

The Besiegers must likewise take care the moment they are Masters of the Gallery, to make three or four passages of entrance, by breaking through the Wall in three or four places; and that for as many reasons. —First, that if they should be driven out by the Enemy, they may the more easily recover it, as they will be able to charge them in three or four places, more effectually than in one. Secondly, lest any of their Fourneaus happening to spring before the rest, extinguish the Fire of them; and should this happen to those Fourneaus which are next the Miner's Hole, in that case there would be no possibility of springing the rest, the only way to them being choaked up, which would give those of the Place an opportunity of withdraw-

* This was done at *Luxembourg*, which secured the Miners from all the Fires that could be thrown down there.

ing

ing the Powder, and stopping up both the Chambers and Gallery; whereas, should an inconvenience of that sort happen, when they have two or three different entrances, it would not delay things above half an hour at most. The third reason is the convenience of those Entrances for the Besiegers carrying in the materials wanting for the many Fourneaus they have there, and for throwing away the waste Earth drawn out of them, which would be very troublesome, if there was only one passage. And lastly, because those passages may serve for Fourneaus themselves. Things being thus ordered, the Miners are to be set to work on both sides of the Gallery, one at every five Toises distance from the Angle of the Shoulder to within three or four Toises of that of the Bastion, that enough of the latter may be left standing, to cover the Besiegers from the opposite Flank, in mounting the Breach to the Assault.

The Miners being placed in this manner, will each of them make two T's on their own side, and at every T two Fourneaus; they are called T's in the Miners Language, because they are in that form; those in the Earth of the Bastion should be carried a good way farther in than those in the Walls, and for both to have a good effect, there should

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not be above three Toises distance betwixt them; that space will be easily carried away with the rubbish of the two Fourneaus on each side.

The Besiegers must take care that the Soldiers in carrying the Powder keep at a great distance from one another, that if the Grenades or Fire-pots thrown by the Besieged from above should happen to light upon any of them, they may not involve their Followers in their own unhappy destiny.

For the more easy carriage of the Powder, not above five and twenty or thirty pounds should be put in the same Bag, that the Men may not be over-loaded, but pass quickly on, and escape the Grenades. Great care must be taken to tie the Bags close, that none of it may be spilt, lest, leaving a Train behind, a Fire-pot, or Grenade happening to fall on it, set five hundred Men on fire, if there should be so many in the File carrying Powder.

To prevent this misfortune two empty Bags must be laid one upon another, the first over the Powder, the second upon the first, and well tied down, which will serve as a Wrapper to the Powder-bag, and prevent the spilling. The Fourneaus being all charged, the Train or Saucisson must be proportioned out in such a manner as that
all

all may take fire at the same time; which will have a perfect good effect, because the Fourneaus, assisting one another, by going, as it were, hand in hand, will move that great mass all together, so as just to overturn it, without throwing the Stones twenty paces; and it would be quite ill judged at any time to make such vast Mines as should hold as much Powder one of them as four of mine, to kill a number of their own people with the Shivers of their Stones, yet make but a small Breach, steep and difficult to mount, tho' easy to descend; whereas, by one of mine, without danger to any of those intended for the Assault, a Breach may be made wide enough for a Battalion to mount in Front.

It may, perhaps, be objected to me, the length of time required for making such a number of Fourneaus; but that difficulty is easily solved, because, according to all rules whatsoever, observing the conduct I have before laid down, forty Miners properly relieved, will make and charge forty Fourneaus in as little time as one Miner relieved after the same manner, can make and charge one; so that there is no more in the thing, than the having a sufficient number of Miners.

The

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The Fourneaus being all charged and ready for firing, if there is any reason to apprehend that when all are retired out of the Gallery, the Besieged should think proper to come in there to cut the Saucissons, 'tis only firing two or three Fourneaus on the side you expect their coming to stop their entrance, which cannot but produce a good effect, not only in regard to the preserving the Fourneaus yet to spring, but farther, as the Besieged imagining you have sprung all, or that the rest have missed Fire, will throw themselves boldly upon the Breach to defend it; then is the time, at once, to fire all the rest *, which will, without any difficulty bury all upon the Bastion or the Work in their ruins.

Whilst the Fourneaus are charging, some must be set to work upon mending the ways, and making them easy for those who are to Assault, that nothing may retard that action, which is to decide either the loss or safety of the Place. All the Grenadiers of the Army are to be or-

* This was done above an hundred times at the Siege of *Candie*; and at *Luxembourg*, they sprung six Fourneaus, on that side of the Gallery where the Enemy might have entered, which stopped their Entrance, and made a Breach of fifteen Toises wide; the Garrison came to defend it, and then thirty others were sprung, which buried most of them, and made a Breach of twenty-five Toises, including the former.

dered

dered upon this service, sustained by a number of double Detachments; those again by the Battalions bringing up the Rear, to assist in the Charge, if the Detachments should meet with too much resistance.

Matters being thus ordered, and the Fourneaus having had their expected effect, the Troops on command, after letting the dust go off, begin to move; not marching too fast, that they may not be out of breath. It will not be amiss if they halt a little at the foot of the Breach for the Rear to come up, and for all to take breath, that they may be able to reach the Head of the Breach afterwards, without halting, depending upon this, that the greatest danger is over, when once they are got there, as the Fire of the small Arms will then no longer take place, which is much more to be feared than handy-blows, where every man is to take care for himself. Those who are foremost in the Charge, it is certain must be exposed to some tribulations, being obliged to endure all the Besieged shall think proper to throw on their heads; but these sort of businesses never succeed without their cost, which is more or less, just as it happens.

I sup-

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I suppose then, for the Besieged, that they will do their best, and having all at stake, will surpass themselves in resolution; that they will spring just in the nick of time, and under the feet of their Enemies, the Fourneaus which they contrived to make in the remains of their Gallery, at the bottom of the Ditch; lastly, that with their Fireworks and Powder scattered on the Breach, they will set their Enemies in a flame, and to prevent their making a Lodgment, will drive them off * once, twice, or four times, if you please; but, as I said long ago, the weakest must give way; all depends upon a little sooner or later, more especially when the Besiegers are so far advanced, and no Army on the march to relieve the Place: I shall therefore take it for granted, that the latter, being as obstinate as their Enemies, and abundantly stronger, will at last prevail so far as to lodge themselves on the Head of the Breach, which will not be very difficult for them to do, the Lodgment being almost ready made to their hands by the effect of the Fourneaus. Being lodged there, will

* The *Turks* at *Candie* made an Assault upon the Bastion of *St. Andrew*, during which seventeen Fourneaus were sprung under their feet, and were followed by a *Sortie*, which prevented the *Turks* succeeding. *Monsieur de Chavigny* commanded there.

strengthen

strengthen themselves, make the Alcent easy, and hoist up Cannon, either by strength of arms, or a Capstane, and, raising a Battery, ruin their Enemies Retrenchment. The Besieged, on their side, have only to remember what they have been doing the whole Siege, and to continue very near the same conduct. But I must take the liberty to inform them, by the way, that, in order to defend one Retrenchment well, there must be a second likewise, to ward the first from being taken the first brunt, and to enable them to treat upon better terms. The Besiegers likewise, on their part, will take the same steps as at those other Works they have carried, to make themselves masters of it; except at *Candie*, I never saw a Retrenchment serve to any other purpose, than making a Capitulation; and so I shall leave the Besiegers to make their own terms, without my interfering.

Having now mentioned whatever I have either seen practised by others, or done myself, at the Attack and Defence of a Place with a dry Ditch, I think it will not be improper just to say a word or two en passant, of the Defence of a Place with a wet Ditch before it. I say a word or two, because all the Stratagems already mentioned, and recommended to be put in practice 'till you

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come

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come to the side of the Ditch, are here to be practised after the same manner, the Mines only excepted, which neither the Besiegers nor their Enemies can possibly make, on account of the Water, which in digging they meet immediately; in other respects, as the Retrenchments on the Works and on the Bastions ought to be the same, attacked and defended after the same manner, to avoid repetition, I shall content myself with speaking of the Attack and Defence of the Cover'd Way, and the Passage of the Ditch only, which are two very different things from those, I have hitherto been treating of.

To begin with those of the Place: I would advise them, before their Glacis, to make a second Ditch, which will furnish them with Earth sufficient for the Parapet of their Cover'd Way, and for repairing and enlarging the Ramparts of their Works, and Body of the Place; they would do well to plant Sallies, or some other Trees, the length and breadth of the Glacis, which will have an agreeable effect in time of peace, and in war a very useful one, if the Place should be attacked; because, when cut down on the side of the Attack, they will furnish wood for Fascines, and for a thousand other necessary uses: and the roots of them, being left in the Ground, will give infinite trouble to the Enemy in making their Lodg-

Lodgment on the Glacis. I would likewise have Redoubts with good Revetements in all the Places of Arms, like those I have already spoken of, and a double Palisade on the side of the Attack, with a little Ditch between, to prevent the effect of the Grenades. The second Palisades ought all of them to stand in a right line with the first, for the reasons given before, but not to be set up 'till the Enemy are very near the second Ditch, that they may not be apprized of them. Further, the Besieged should make a kind of a small Harbour in the Gorges of all their Works, for their Boats to lie under cover in, which are to pass and repass with necessities from the Place; which Boats must have a covering of strong thick Planks of Musquet-proof, all over them, to secure those within them; when there are no Boats, a Float may be made of seven or eight Pieces of Timber join'd together, and fitted up with a Covering of Planks, as before, to answer the same purpose. The Besieged, having put things in this posture, will expect their Enemies with resolution.

As I have laid it down, and made it appear, that the Defence of a Place with a dry Ditch, and of a wet one, are to be conducted in the same manner, as far as to the Counterscarp, excepting what regards the Mines only; I shall now suppose that the

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Besiegers are so far advanced as to have made their Lodgment, upon the second Ditch-side, notwithstanding all the Stratagems their Enemies could make use of to prevent them ; that, having strengthen'd themselves there, they will endeavour to drain the Ditch and let the Water run off, in order to attack the Cover'd Way with greater Ease ; if they cannot drain it, they will fill it up with Fascines, &c. in many places, so as to pass it some how or other ; in the next place I will suppose that, having passed the second Ditch, they will lodge themselves on the Palisade, after a terrible resistance on the side of the Besieged ; that they will fortify themselves there, and bring Cannon thither to demolish the Redoubts in the Places of Arms before spoken of, and that after some time, and many obstacles, they will at last make themselves masters of them, and likewise of the Cover'd Way ; and when that's done, fall to work at the Passage of the great Ditch, which there are two several ways of doing : If the Ditch is to be drain'd, after the Defences of the Place are ruin'd by the Cannon (I mean that Flank which is opposite to the Passage of the Ditch) the Besiegers will pass it in the same manner as they did the dry Ditch ; if it cannot be drain'd, they will fill it up by degrees with great Trees, Fascines, Stones, in short, whatever may

may contribute to raise a Heap there, observing to carry on a Parapet along the new Causeway they are making for a Cover from the opposite Flank; if there is any Current towards the middle of the Ditch, a passage must be left open of five or six feet wide to prevent their Causeways being overflow'd: Planks must be laid over that Opening, and the Parapet continued, of thick Boards Musquet-proof, like that on the Causeway; the Passage of the Ditch may be enlarg'd considerably by joining a Bridge of Boats to the Causeway, which will make a very broad way for the Troops to march over to the Assault, after the Fourneaus shall have had their effect. I refer my Reader, upon this last article, to those Places where I have spoken of Fourneaus, and of the dispositions necessary for making an Assault.

This is what I had to say concerning the behaviour of the Besiegers: Let us now see in what manner the Besieged will defend their second Ditch, their Cover'd Way, their great Ditch, and the Body of the Place.

The Besieged must diligently apply themselves to the making small Sorties very frequently, which, after alarming the Enemy, as I have observ'd, are to retire to their Cover'd Way, either by means of Hurdles, or Planks laid over the second Ditch, to favour both their Sally and Retreat. They must
here

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here be more upon their Guard than even where the Ditch was a dry one, not to make large Sorties; because, if they should be hard press'd by the Besiegers, it will not be possible for 'em to retire by a single Defile, like that of Hurdles or Planks a-cross the second Ditch, without being either intercepted, or defeated in part; for which reason a wise Governor will preserve his Men to make a good Defence of his Cover'd Way, on which the safety of the Place depends, and content himself with frequently disquieting the Enemy, either by making small Sorties, or by firing Cannon from his Outworks, or from the Bastions, or Angles of the Cover'd Way, or other Places, where he shall think proper to place them for that purpose; he may likewise make use of those Fire-balls so often spoken of; and as it will not be possible for the Besiegers to attack the Counterscarp, 'till the Ditch is fill'd up in more places than one, which can only be done, making Defiles for three or four Men at most to pass a-breast, and these Defiles being within four or five Toises distance of the Palisades, it will be pretty difficult to pass them in such a manner, as to make a Lodgment on the Cover'd Way crowded with a large part of the Garison intrenched up to their Teeth, and with a double Row of Palisades

fades before them; but if after all that should happen to be the case, as the Redoubts in the Places of Arms having good Retrenchments, are not to be forced without Cannon, or the Miner; a Governor, while they subsist, will have it in his power to overturn the Lodgment made by the Besiegers, as often as he thinks fit, and even force the Besiegers themselves to retreat beyond the second Ditch.

Another way, which those of the Place may take to divert their Enemies, is by firing upon them from their Boats before spoken of, which Fire, together with that from their Place of Arms, Outworks, and Body of the Place, will pretty well thin the Besiegers, when they come to attack the Cover'd Way.

The Besieged may likewise make use of them to disturb their Enemies in their Passage of the Ditch, when they shall have lost their Cover'd Way, after having defended it for a long time; these Boats may retire at any time within the Gorge of the Works, where they will be under Cover in those little Havens before spoken of.

The Besieged, finding themselves in this extremity, will endeavour by all means in their power to stop the Enemy in their Passage of the Ditch, either by their Small-arms,

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arms, or Cannon, which, they will mount again on the Flank of the Bastion for that purpose, after having first repair'd it, or else on the Face aslanting the Embrasures, to cover them from the Cannon of the Besiegers; they will also throw a number of Shells to endeavour to destroy the Causeway, and to kill or drive all away from thence. In short, if, notwithstanding all their skill and endeavours, the Enemy, still obstinately persisting, find ways and means to pass the Ditch, to fix the Miner, and make a Breach, they must set all upon the Cast, and defend it to the last Extremity: they will not here run that hazard of having their Place carried by Assault, as where the Ditch was a dry one, because the Besiegers, having no other way to come at them but over the Causeway, will be obliged to rank off; so that here ought to be the bloodiest spot of the whole Siege, as the whole strength and vigour of the Besieged should here be united. If they have any Retrenchments, they will defend them, in the same manner as where the Ditch was dry; to which place I refer them, and shall here make an end with this conclusion, that it is not an easy matter to take a Place defended by a brave Man, who knows his duty; and, at the same time, that no Place is impregnable, without either exterior Succours, or the intervention of some accident

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cident in its favour, which during a tedious Siege may happen, and may oblige the Enemy to quit the Field.

If I have not spoken of rising grounds, which are sometimes to be met with in a Siege, and may be of service to overlook the Reverse either of some Work, or its Covered Way, it is, because I take it for granted, that men of skill and understanding know how to make the best use of all Advantages, that fall in their way.

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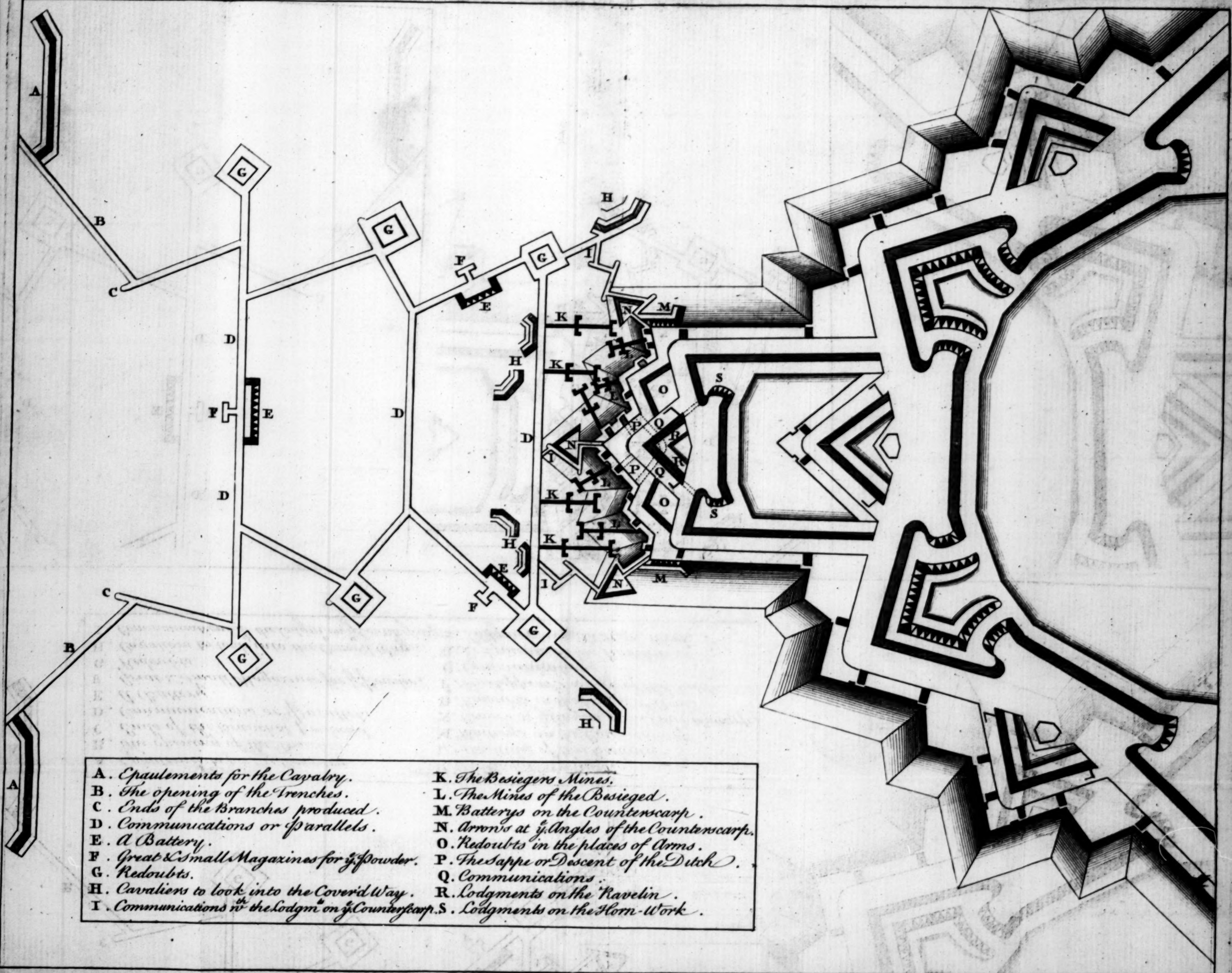
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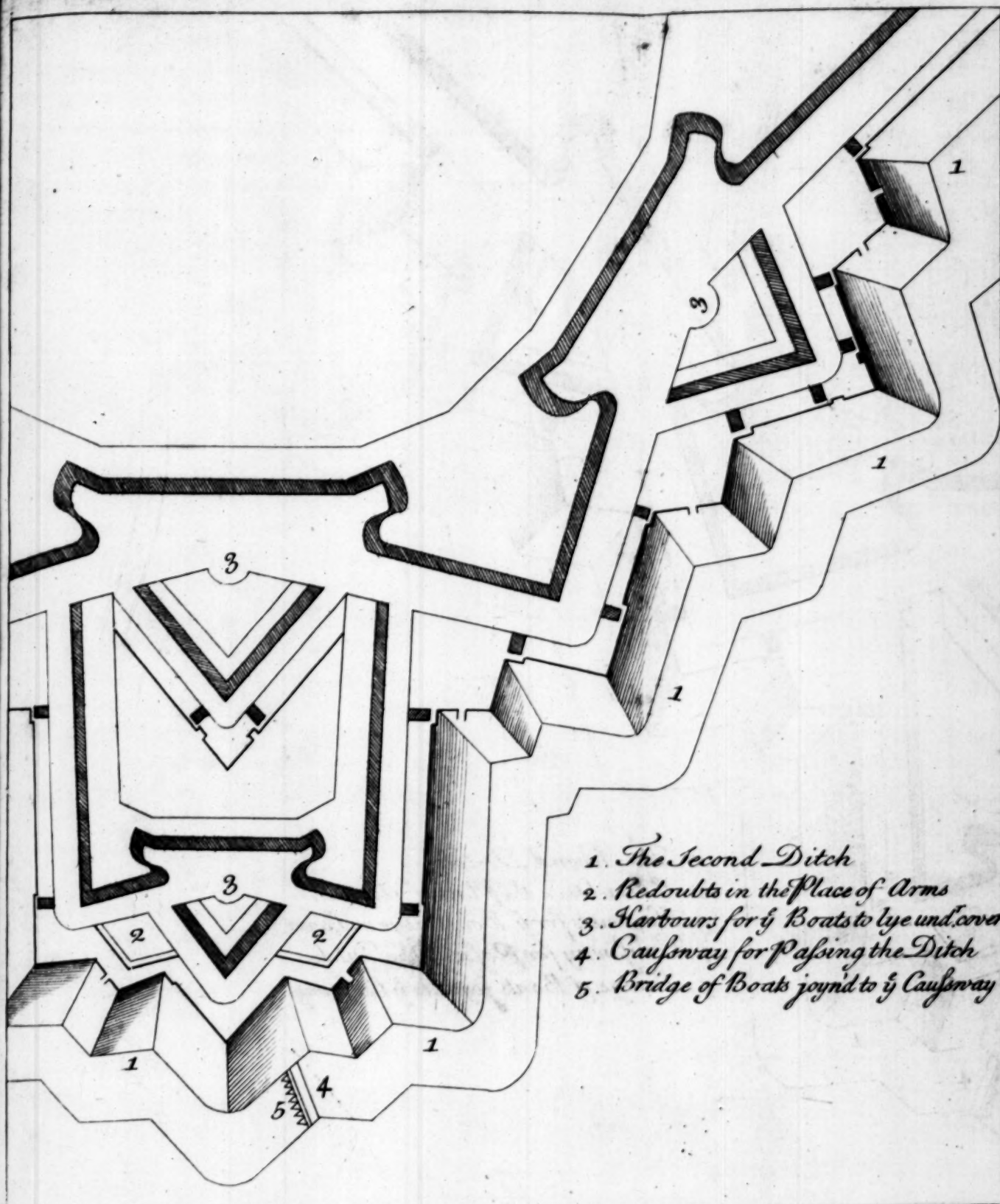
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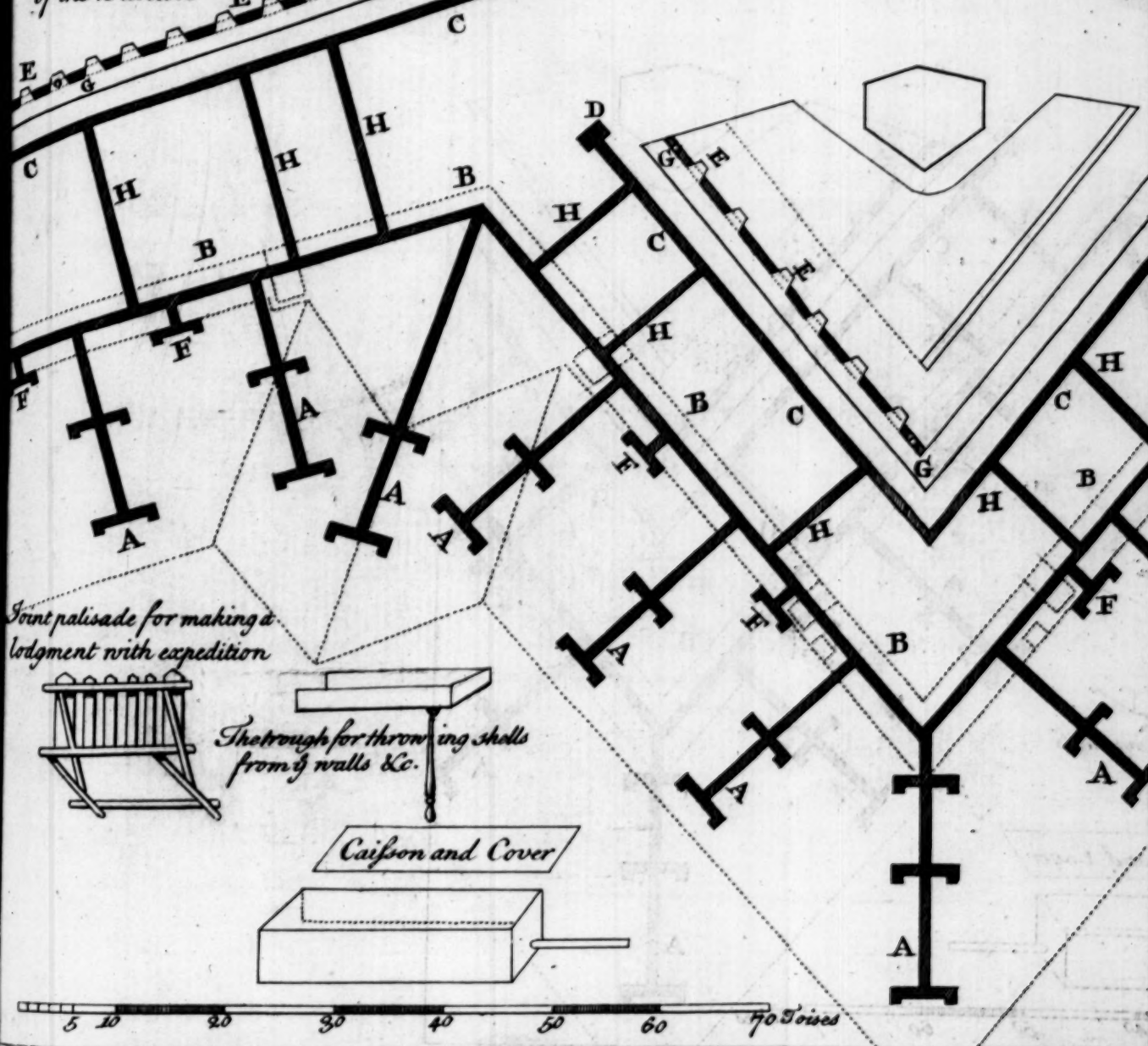
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| A. Epaulements for the Cavalry. | K. The Besiegers Mines. |
| B. The opening of the Trenches. | L. The Mines of the Besieged. |
| C. Ends of the Branches produced. | M. Batterys on the Counterscarp. |
| D. Communications or parallels. | N. Arrows at y. Angles of the Counterscarp. |
| E. A Battery. | O. Redoubts in the places of Arms. |
| F. Great & Small Magazines for y. Powder. | P. The Sappe or Descent of the Ditch. |
| G. Redoubts. | Q. Communications. |
| H. Cavaliers to look into the Cover'd Way. | R. Lodgments on the Ravelin. |
| I. Communications to the Lodgm on y. Counterscarp. | S. Lodgments on the Horn-Work. |

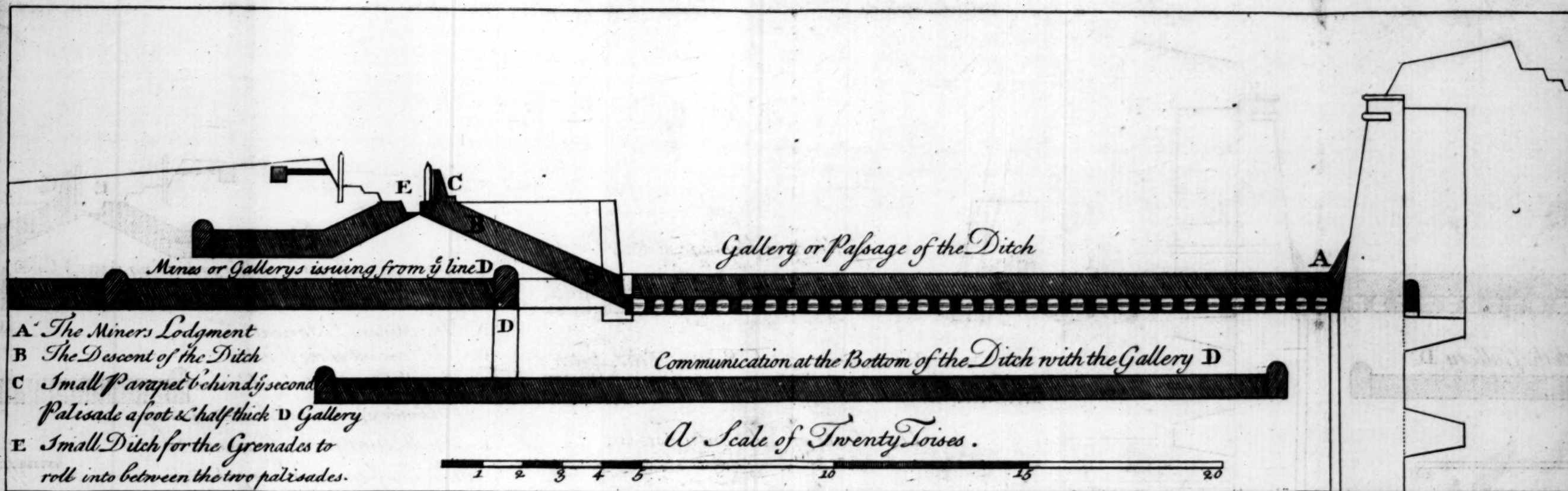


1. The Second Ditch
2. Redoubts in the Place of Arms
3. Harbours for y^e Boats to lye und^r cover
4. Causeway for Passing the Ditch
5. Bridge of Boats joynd to y^e Causeway

A Mines or Caibons whose Gallerys
 coming out under y^e counter scarp
 mark'd with a prick'd line goe under
 the ditch having a communicatⁿ gallery
 B Gallery at y^e Bottom of the ditch
 C Gallerys round about y^e Bastion
 and Outworks
 D Descent into those Gallerys
 E Gallery behind y^e walls
 of the Bastion

F Fougasses under y^e parapett of y^e cover'd way
 G Winding stair ways under the parapett
 into the Gallery E
 H Communication of the two Gallerys





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JOURNAL

OF THE

SIEGE of *ATH*,

Conducted by
MONSIEUR *de VAUBAN*.

The Town was invested the 15th of May, the Trenches opened the 22d, and the Besieged beat the Chemade on the 5th of June 1697.

THIS Town is situate in *Haiaul'*, in the midst of a fertile plain, on the little river *Dender*, just where the *Leuze* falls into it.

It commands the country all around, excepting some rising grounds on the side of the gate of *Tournay*, and is a regular fortification, consisting of eight Bastions, with Revetements, excepting that three of them lie in a Line fronting that eminence; very few Places are fortified with greater exactness.

It was built at a time when the King spared no cost to fortify all his Towns ; and if Monsieur *de Vauban* had not at that time that vast stock of experience, which he afterwards acquired in the construction of above two hundred Places of different kinds, it was nevertheless a sample of the greatness of his Genius ; for nothing can possibly be more exactly calculated, better designed or proportioned, than all the parts of this Fortification, which may serve for a perfect model of the Art, on whatever side you examine it.

The truth is, as it was a regular fortification, the rules and proportions of which are well known, the Attack was so much the easier, requiring no farther study than the knowledge of the ordinary rules, which are inseparable from that Art ; which is not the case in Places of an irregular or *Bizarre* construction, which oblige the Engineer to search for expedients in his own imagination, whose purposes should be answerable to the irregularity of the Place, in which respect they are often preferable to the regular ones.

Nevertheless, as this regularity was accompanied with great skill and judgment, as the Movement of the Waters was well contrived and disposed ; and, in a word, as Monsieur *de Vauban* had piqued himself
on

on this Work, a particular application was necessary, and a Plan of Attack to be formed before-hand, which in its way should be as perfect as the Fortification; and it is not easy to say which has the advantage, as appears by the Plan.

Tho' *France* shewed great dispositions towards Peace, and had even sent Plenipotentiaries to the Place of Congress, in order to treat with those of the Confederates, the King nevertheless gave orders that his Troops should be early in a condition to take the Field.

May 15th, at night-fall, Marshal *Villeroi* sent off from *Tournay*, a Detachment, consisting of about four thousand Horse, under the command of the Prince *Camilly*, with orders to go and invest *Atb* on the side of *Ligne*, where they arrived about nine o'clock; about the same time, two other Detachments of equal strength, one from *Helchin*, commanded by Marshal *Catinat*, and another from *Mons*, consisting of the King's Household Troops, under the Command of Monsieur *Gassion*, invested the Town on the side of *Brussels*, and of *Oudenarde*.

At ten o'clock the same night, the Troops encamp'd before *Tournay* on that side of the gate of the *Seven Fountains*, began to file off like-

likewise, attended by a Train of sixty Field-pieces, which lay on the Glacis there.

May the 16th, at three o' clock in the morning Marshal *Villeroy* left *Tournay* himself, with the Troops quartered in the Town, and between the Post of *Valenciennes* and *Chartreux* crossed the *Scheld* on the Town-boats, and others he had ordered to be built at the village of *Vaux* over against it, and went and encamped at *Leuze*; he was followed the same day by sixteen thousand Pioniers, and one thousand eight hundred Waggons, leaving only at *Tournay* the ordinary Garrison, and the Bread Waggons, of which they had prepared forty thousand Rations.

On the 16th likewise, the rest of the Troops, which composed the army of Marshal *Catinat*, left the Camp at *Helchin*, and having crossed the *Scheld* over-against *Pottos* on Bridges laid for that purpose, went and encamped at *Fresurs* and at *Bussenal*, which was their appointed rendezvous, at two leagues distance from *Atb*.

The Marquis of *Montrevel*, Lieutenant-General, remained with the rest of the Troops to guard the Lines from the *Scheld* to the sea; and the Marquis *de Crequy* was encamped on the *Laye*, which falls into the *Scheld* below those Lines, with eight Battalions

talions and nine Squadrons, to join him in case of necessity, and to bridle the Garrison of *Oudenard*.

Betwixt the 16th and 17th, Marshal *Villeroy* having passed the night under a double Picquet-Guard before *Ath*, returned afterwards to his Camp at *Leuze*; that day the Troops which were to compose the Army of Marshal *Catinat*, and above twenty thousand Pioneers being come up, and all having taken their Posts, they began to work at their Lines of Circumvallation; the same day the Army of Marshal *Villeroy* making a motion, extended itself as far as *Ligue*.

The 18th, they continued working at their Lines, and throwing Bridges over the *Dender*; the Marshals *Villeroy* and *Catinat*, with Monsieur *de Vauban* and other general Officers went and reconnoitred the Ground on the side of the Abby of *Cambron*; and it was resolved to put six Battalions and a Regiment of Dragoons into that Abby, with orders to entrench themselves there, and also to send a Party to *Lens* to shut up that Pass.

The 19th, they continued getting together all necessaries for the Siege of the Place, and the Enemy made a considerable Fire with their Cannon, but with little or no effect.

The

The 20th, Marshal *Villeroy*, who had advanced with his Army from *Leuze* to *Ligne*, came and encamped at *Ostiche*, where he fixed his Head-quarters with *Pepigny* on his right hand, and *Kemede* on his left.

The 21st, Marshal *Boufflers* having received advice, that Prince *Vaudemont* had advanced with the first Line of the Army under his command as far as *Lonbeck* on the *Senne*, a little below *Hall*, advanced with his own likewise as far as *Neurville*, below *Joignier*. The same day Monsieur *de Vauban*, who had his Plan of Attack ready formed, and had very frequently before reconnoitred the Ground, went thither again with Monsieur *de Catinat*, and a few Engineers, who advanced pretty near the Place, under favour of the dusk of the evening.

The 22d, every thing being ready for the opening of the Trenches, they were opened accordingly at seven in the evening in two Places on the side of the Gate of *Brussels*, a shower of Rain falling very opportunely, which made the night very dark.

The Count *de Tesse*, Lieutenant-General, mounted on the right, with the Sieur *de Salis*, Brigadier, and the Sieur *Dupuy Vauban*, Engineer in chief, and Brigadier, with there

three Battalions of the Regiment of *Navarre*; the Count *de Marfin*, Marshal de Camp, on the left, and the *Sieur de Bojc*, Brigadier and Engineer, two Battalions of the Regiment of *Poitou*, and that of *la Marche*.

One thousand Workmen were order'd that night upon each Attack, and, to sustain them upon the right, a Company of Grenadiers of *Montlevrier's*, one thousand Fusiliers of the same Regiment, fifty of *Santerre's*, and one hundred of *Surlaubec's*; the two thousand Workmen were so well distributed by the Engineers of the two Brigades, that night on Duty at the Trenches, with so much order and dispatch, that by eleven of the clock the whole Work was traced out.

Monfieur *Dupuy Vauban*, who perceived that, with a little stirring, there was a possibility of making a Communication betwixt the two Attacks that Night, sent the *Sieur Remond*, Sub-Brigadier, to reconnoitre that on the left, who, going thither immediately, consulted with Monfieur *Dubosc* what was to be done to join them, and laid the first Fascines himself of that Return. Thus they accomplished in one night, what they had proposed for the work of two.

That Work may be seen in the Plan, consisting of two Lines of four or five hundred Toises each almost parallel to one another,

other, having a Communication by a Trench almost parallel to the Place; those Lines might very well have been shorten'd, but for the situation of the Ground, which formed a Counter-Glacié as wide as the whole Front of the Attack, and obliged Monsieur *de Vauban* to begin opening the Trenches at something a greater distance for the Troops to enter them with safety. Fifteen hundred Toises of Trench-Work were finished that night, and the two Attacks joined in the morning by a Parallel, at two hundred and seventy Toises distance from the Place; all which Works were made and compleated without the Loss of a single Man.

May the 23^d, at four in the Afternoon, the Marquis *de Vins*, Lieutenant-General, mounted the Trenches with the Marquis *de Vibray* Brigadier, and two Battalions of *Anjou* and *Tournay*. The Count *de Gran-
cey*, Marshal de Camp, mounted on the left with two Battalions of *Humieres* and that of *Vexin*.

That night the first Parallel was extended as far as the Chapel of *Notre Dame de Loretto* on the right, and on the left as far as the Inundation; they likewise open'd three Branches upon the Capitals of the Bastions of *Namur* and *Limbourg*, and upon the Ravelin of *Barbançon* (R) which, after stretch-
ing

ing to the right for about fifty or sixty Toises, made a double to the left, to avoid being infiladed; at the extremity of which they began upon a second Parallel, and made a communication that night between one part of it, and the first Parallel on the side of the Inundation; which was a very considerable piece of Work, and very well conducted by the Engineers.

That day the Army of Marshal *Villeroy* made a motion; the left advancing towards the *Dender*, over which he threw several Bridges, and sent out a large Detachment at night, to get intelligence of the Enemy.

The same day a Convoy of ten Pieces of Cannon, with four hundred Ammunition-Waggons, and a great quantity of Officers Baggage was attack'd at the Village of *Maude*, within two Leagues of *Tournay*, by a *Bavarian* Partisan, with two hundred choice Men, pick'd both from the Horse and Foot; but a part of the Escorte, coming in upon the Alarm, charg'd 'em so vigorously, that the Partisan was killed with eighteen of his Men, and the rest put to flight, without any farther loss on our side, than three Soldiers kill'd and a *Swiss* Lieutenant wounded, after which the Convoy happily reach'd the Camp.

Towards the evening of the same day came advice, that the Elector of *Bavaria*,

finding the Post he held at *Deinse* of no service to him, had abandon'd it, and march'd his Army back again by *Ghent*, in order to join that of the Prince of *Orange*, taking their Route behind the *Scheld*.

Major-General *Fagel*, who had incamp'd before *Newport*, march'd off from thence with twelve Battalions, to take possession of the Post of *Deinse*; upon which news, the Marquis de *Crequy* had Orders for himself and his Detachment, to draw towards the Army of Marshal *Villeroy* at his Camp at *Ostiche*; and the Marquis de *Montrevil* had Orders to leave *Cambray* with twenty Battalions, to go and relieve the Marquis de *Crequy*.

At the same time Marshal *Boufflers* advanced with the left near *Cambron*, so that the three Armies were in such a situation, as to be able to join one another at a very short warning.

May the 24th, the Trenches were mount'd on the right by the Marquis de *Larcy*, Lieutenant-General, and the Sieur *Lec*, Brigadier, with a Battalion of the Regiment of *Artois*, one of *Catinat*, and one of *Berry*; and on the left by the Marquis de *Clairambaut*, Marshal de Camp, with two Battalions of *Vermandois* and one of *Bugey*.

Monfieur de *Vauban*, who visit'd the Trenches constantly twice every morning to inspect

inspect and examine the Work of the night before, in order to see what was further to be done, gave orders for continuing the first Parallel that night as far as the Hill called *la Cense de Trabison*, which was left without the Line; to compleat the Fascines of the second Parallel, and ordered three small Branches to be carried out from thence, marking upon one of them a Place for a Cannon Battery (*F*); he thought proper likewise that a small Attack should be formed below Mattle (*L*) for the security of the Trenches on the left, which extended to the Inundation, where the Enemy might have given 'em some disturbance, by sending a party of Infantry with Cannon a-cross the River, from whence they would have enfiladed our Trenches; a hundred Men of the Regiment of *Navarre* began this Work.

May the 25th, the Chevalier *de Tefse*, Lieutenant-General, and the Sieur *de Bligny*, Brigadier, mounted the Trenches on the right, with three Battalions of the Regiment of *Stoppa* and two of *Salis*. That night we began working upon five Batteries (marked in the Plan 1. 2. 3. 4. 5.) which Monsieur *de Vauban* had marked out in the second Parallel, and open'd two Saps upon the Capitals of the Bastions of *Namur* and *Limbourg*, and carried out another Branch

Branch from the first Parallel, a little below the Chapel of *Notre Dame de Loretto*.

The Enemy sent out a few Musqueteers, who got amongst some Hedges and old Houses, with a design to give our Workmen some disturbance, but they were soon driven back again by a Detachment of two hundred Men; the *Chevalier de Tesse* received a contusion and a wound in his side.

To this day we have had no Cannon Battery, *Monfieur de Vauban* reserving them for the second Parallel, being of opinion that Batteries at so great a distance only serve to imbolden the Enemy, and burn Powder to no purpose.

The first Parallel was designed merely as a check upon the first Sorties from the Town, and served for a kind of Circumvallation, at three hundred Toises from the Body of the Place; the second was intended for the Batteries, being one hundred and fifty Toises distant from the Cover'd Way.

May the 26th, in the evening the *Chevalier de Gassion*, Lieutenant-General, and the *Marquis de Brion*, Brigadier, mounted the Trenches on the right, with two Battalions of *Maulevrier*, and an other; and the *Marquis de Hautefort*, Marshal de Camp, on the left with three Battalions of *Surbec*. The Workmen, both on the
right

right and left, were busy that night, carrying on the two Saps (*C* and *E*) on the Capitals of the two Bastions of the Attack, and opening a third (*D*) upon the Capital of the Ravelin of *Barbancon* (*R*) and extending the first Parallel upon the right as high as the Bastion of *Brabant*, and likewise the Branch, that had been begun the night before, below the Chapel of *Notre Dame de Loretto*, was push'd forward so as to join the first Parallel; several Places of Arms, very commodious for firing, were made, and five Cannon Batteries were finished.

Those Batteries were disposed with singular Art: Every body knows that the common practice of the Officers of the Train is to fire at all before them, with all the fury that is possible, ruining without distinction all objects that present themselves to view, whether Works, Batteries, Towers, or Cavaliers; they even forget themselves so far as to fire upon any building which affords a fair mark, as Gates, Bridges, Corps de Gardes, Sentry-boxes on the Walls, sometimes at Houses and Steeples, for the Mattrosses only want to make Havock appear, which was not Monsieur *de Vauban's* taste, who had so frequently seen the fruitfulness of it at so many Sieges; he had therefore placed these Batteries in a manner

manner very distant from such views, aiming more at annoying the Enemy, and driving them from their Defences, than at making havock to no purpose, which tends only to the ruin of the Buildings, without conducing to the taking of the Place. These therefore were placed in a quite different manner from all before them; for, taking in the whole Front of the Attack, they traversed and * infiladed with Plungings the Bastions, Ravelins, and Cover'd Ways of the Place in such a manner, that, after they were once well in play, the Enemy could no longer stand to their Defences; and they so effectually extinguished the Fire of the Place, that the Besiegers could pass and repass between the Camp and Trenches openly without Danger.

It was not without difficulty, that Monsieur de Vauban prevailed on the Officers of the Train to lower the Charges of their Great Guns to batter *a Ricochett* with small Charges, the effects of which did not presently appear to them; but, after a good deal of pains-taking, they were at last reconciled to it. Bounce and Clatter and Readiness for Action had hitherto composed the whole merit of the Train at Sieges; here the thing was alter'd, for never was known before,

* A Description of Batteries *a la Ricochett*.

so little noise made with so considerable a number of Cannon as were fir'd at this Siege.

This manner of placing the Batteries has something in it more judicious and skilful than that of former times, where they only presented themselves to the Front attack'd; for, in order to come at the reverse of those Parts, they must be thrown off a good deal to the right and left; from whence two advantages proceed: *First*, that the Cannon, firing from above their own Works gives them no disturbance, which is not to be avoided in the common way of Attack; and, *Secondly*, that the Enemy, pointing all their Guns at the Batteries, leave the Trenches at quiet, which by this means are carried on betwixt the two Fires in great security.

'Tis true we had two Batteries (Numbers 3. and 4. in the Plan) which were behind the Works, but as they fir'd with a high elevation, because of the *Ricochets*, no inconvenience ensu'd.

Monfieur *de Vauban* had appointed Commissaries, Men of understanding, to each of the Batteries, to whom he had given directions for the conducting and serving 'em, without any alteration to be made, or being reliev'd themselves, during the whole time of the Siege; by this means every one

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was

was well informed as to the intent of his own Battery, and with the range of his Pieces. Monsieur *de Vigny*, who had taken care to provide great plenty of all things necessary, and with a diligence incredible, received great assistance from Messieurs *de Maissoncelle* and *Roussel*, old Provincial-Commissionaries of the Train, who bestirred themselves notably all the time of the Siege.

Monsieur *de Vauban* had besides charged Monsieur *Ferry*, one of his Aides de Camp, to keep a constant eye upon the Batteries, insomuch that, during the whole Siege, he had great reason to be satisfy'd with the conduct of the Artillery. The truth is, that new way of Firing, which made so little noise, at first was not at all relish'd by the General Officers, and gave great uneasiness even to the Officers of the Artillery, to whom these *Ricochets* were a new thing; and what contributed to make 'em still more uneasy, was the continual Rains which fell, and broke their measures, making the Platforms so slippery they were not able to stand: But, fair weather returning, and finding themselves under a necessity of doing it and of learning the method, they applied themselves so diligently, that in two or three days they became very expert.

We found, after the Place was taken, that the greatest part of the wounded had
their

their Legs and Arms carried away upon the Rampart by the effects of these Batteries, the Bullets giving the Enemy incessant disquiet on all sides, following 'em even into their safe Retreats, dismounting their Guns, by breaking the Wheels and Cheeks of the Carriages; insomuch that, from the time those Batteries were once settled, the Besieged fired but very seldom on the Attack, and that only from two small Pieces hid in a corner, where they were so pent up, that they were served with much difficulty, reeling and tottering upon their Carriages from side to side.

It is necessary to observe, that these *Ricochet* Batteries must always be placed either on the right or left of the Attacks, in order to infilade and fire upon the reverse of the Cover'd Ways, and other Works.

The Pieces for this Service are to be charg'd with a small quantity of Powder, just sufficient to throw the Bullet at its utmost range into the Works which they infilade, where, after first alighting, they bound and pass forward with an undulating motion, so much to the disturbance of those who should defend the Works, that they are often in the day-time obliged to abandon them: These Batteries are of very small expence, the Pieces requiring for their Charge not above half a pound of

Powder, a little more or less according to their Caliber and the distance of the Object, which should not exceed one hundred and fifty Toises. They are likewise of very great use when any Work is to be assaulted, by firing from them without ceasing for an hour or two before the Attack, driving all away who should defend it, and giving the Troops, appointed for the Assault, an opportunity to take advantage of the confusion of the Besieged. But let us return to the Particulars of the Siege.

Though the Trenches were made very commodious, being twelve or thirteen feet wide, and between three and four feet lower than the level of the Ground, with Banquets on both sides to be ready for skirmishing on the reverse if there should be occasion, so that all who saw the Work admired it: Monsieur *de Vauban*, who directed the doing every thing upon the spot in pursuance of his own Plan of the Design, and who was desirous to preserve an air of neatness throughout the whole, had an Augmentation ordered of four hundred Men above the ordinary Workmen, for that purpose only.

The same day, being the 26th of May, the Elector of *Bavaria*, having cross'd the *Scheld*, joined his Troops with those of the Prince

Prince of *Orange*, and they incamped together, with their left towards *Hall*, and their right at *Goich* extending towards *Ninove*: That day Marshal *Boufflers*, having been joined by Count *Tallard*, advanc'd towards our Camp, and incamp'd with his right upon the Heights of *Silly*, cover'd by the Forest of *Touricourt*, and his left towards the Upper *Dender*. Marshal *Villeroy* extended his Line from *Hamedy*, where he fortify'd the Castle, as far as *Papigny* on the *Dender*, the little River of *Hamedy* being in his Front, and had thrown a great number of Bridges over the *Dender*, to cross it with greater expedition, if there should be occasion,

May the 27th, the thirty Cannon which were now in Battery had for the most part razed the Defences, made a Breach at the Gate of *Brussels*, and had dismounted all the Guns of the Enemy in less than six hours time, excepting two Pieces only.

That evening the *Sieur de Vaubecourt*, Lieutenant-General, and the Count *de Mornay*, Brigadier, mounted the Trenches on the right, with two Battalions of *Sur-laube* and that of *Hautfort*; and the *Sieur de Greder*, Marshal de Camp, on the left, with one Battalion of *Lorraine* and two of *Berry*. All the Troops on duty had orders to carry a thousand Fascines, each Battalion, with
Pickets

Pickets three Feet long, and care was taken to get together a great quantity of Gabions and Tools at the Queue of the Trenches. That night the three Saps (C, D, E) were push'd on upon the Capitals to within twenty-five Toises of the Palisade. They likewise began working upon a Battery (mark'd C) of six pieces of Cannon, almost at the extremity of the Trenches on the right, to incommode the Enemy upon the right face of the Bastion of *Limbourg*, and upon the Curtain of the Ravelin. They likewise settled two Bomb-batteries (mark'd A and B) of a dozen Mortars each, which threw Shells of two hundred and fifty pounds weight; one at the Attack upon the right, the other at that upon the left, and a third of three great Mortars with Shells of five hundred weight; which had, for their principal object, the breaking the Sluice which held the Water of the Ditch, where there was a depth of eight feet, and an Inundation on both sides the Upper *Dender*.

The Workmen at the Muffle-Attack were employ'd in carrying on a Branch, at the extremity of which, Monsieur de *Vauban* designed to erect a Battery of four pieces of Cannon; as that Work was enlarg'd, a Guard was ordered of four Companies of Grenadiers there, and two hundred Men were constantly employ'd in finishing and clearing the Trenches. The

The Besieged durst not think of attempting any more Sorties, after the first and second Parallel were finish'd ; for they incompass'd so large a Front, and were so well sustain'd, that, if they had been so hardy as to have attempted it, they must have run the hazard of being cut off. Monsieur de *Vauban*, judging the thing impossible, told the Marquis de *Catinat*, that he might dispense with putting the Cavalry upon the Flanks.

May the 28th, the Trenches were mounted by the Sieur de *Bachevilliers*, Lieutenant-General, and the Duke d'*Humieres*, Brigadier, with one Battalion of the Regiment of *Bourbon*, one of *Xaintonge*, and one of *Mouffy*, and the Sieur *Dupuy Vauban*, Engineer in Chief, on the right ; and on the left by the Marquis de *Sailly*, Marshal de Camp, with one Battalion of the Regiment of *Anjou*, one of *Denon*, and one of *Choisinet* : As the Attack was contracted in Front, in proportion as it advanced nearer the place, so the number of the Workmen was lessened ; there were only three hundred that night upon each Attack, and three Battalions, to sustain the Trenches. They continued carrying the three Saps on (C D E) upon the Capitals, the two of which on the left were advanced so near the Palisades, that nothing remained to be done, but to make

make the Lodgment there; we continued ruining the Defences of the Besieged, who now seldom fired either their Great-Guns or Small-Arms in the day-time, and only a few Shot by night, so that, without any more loss than one Man kill'd and three wounded, the Approaches were push'd to within ten or twelve Toises of the Points of the Angles. A very large and convenient Place of Arms was made a little above the Sap on the right, and a Communication made on the same side between the Mortar-Batteries and the Cannon-Battery, directly opposite to the flank'd Angle of the Ravelin of *Cambron*.

Monfieur *de Vauban*, whose happy Genius was always contriving new expedients to facilitate the Approaches, by shutting up the Enemy, and keeping 'em in perpetual Disquiet by a proper disposition of the several Fires of the Cannon, Shells, and Small-Arms, thought proper to erect two more Batteries of four Guns each, to keep the Troops in awe in the Ravelins of *Cambron* (O) and the *Recolets*; (P) that upon the right he placed at the farther end of the first Parallel, and that on the left below the Bomb-battery, at the place mark'd K.

By his orders likewise they began raising a Cavalier, at the end of the Sap of the Ravelin (mark'd R) by means of which he
proposed

proposed to drive away the Enemy from the right and left of the Cover'd Way, to facilitate the making of the Lodgment, which succeeded accordingly. He likewise ordered a Battery of four Pieces of Cannon at Maffle (*L*) where a hundred Workmen were employ'd, and sustain'd by four Companies of Grenadiers.

May the 29th, several Communications were made, the Lines of the Batteries completed, and the Trenches carried on Zigzag fashion to the Head of the Glacis at the three Angles of the Attack, as they are mark'd in the Plan, and which were directed with great exactness to the Capitals. Monsieur de *Vauban*, having taken the trouble to mark out the Paths of the Lines with Pickets through the several windings of the Zigzag, in order to have as little Fire to sustain as possible, and without deviating in the least from those Angles; and the truth is, all this was carried on with so much method on our side, and with so little interruption on the side of the Enemy, that it seemed rather the representation of a Siege, than a Siege itself.

The Battery of Mortars on the left began firing on *Tuesday* the 28th of *May*; that on the right not till *Thursday* the 30th, when the Mortars threw their Shells within the Bastions; but, having found their range

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after

after two or three Discharges, they were afterwards directed to fire only upon the Defences and behind the Parapets, and particularly those of the Ravelins upon the right and left of the Attacks; which from hence-forward we shall call the collateral ones when we speak of both together, because the greatest Fire the Besieged made was from thence, and it was that Fire which most incommoded our Trenches, before our *Ricochett* Batteries were put in order.

The Battery on the left consisted of nine Mortars of the common size, and three very large ones which threw Shells of five hundred weight; this Monsieur *de Vau-ban* had destinated for the breaking of the Sluice, which kept out the Inundation of the Upper *Dender* before the Bastion of *Burgundy*, and which the Besieged had made with a view to interrupt our communication on that side, and to have a vast head of Water ready to let in upon us with a full Tide through the Sluice upon a full Ditch, at the time we should be busy in passing it, with intent to break all our Bridges, and those above at the Town, which lay very convenient for our Quarters, in case any succours should come to the relief of the Enemy, so as to be able to force our Lines.

That

That Water, which was kept up about ten feet above it's natural level, gave us not a little uneasiness. The *Sieur Journe*, an old Officer of the Bombardiers, in whom *Monfieur de Vauban* and *de Vigny* had great confidence, was intrusted with the direction of those Mortars for destroying the Sluice, in which he succeeded as we shall see by and by.

The night between the 29th and 30th, the Count *de Tefse* mounted the Trenches for the second time upon the right, with the *Sieur Dorgimon*, Brigadier, the first Battalion of *Sorbec*, the first and last Battalion of *Salis*; and the *Sieur de Filey*, Brigadier, and Engineer in Chief, and the Count *de Marfin* for the second time also, mounted on the left, with three Battalions of the *Irish* Regiment of *Lee*, and the *Sieur Richeraud*, Brigadier, and Engineer in Chief. Our Works were now just within reach of making a Lodgment on the Cover'd Way; and, encouraged by the passiveness of the Besieged, we had ventured to push on our Demi-Sapps continually, without any farther precaution than attending to their motions. *Monfieur de Vauban*, who intended, in pursuance of his Plan, to draw a Line within the Place of Arms parallel to the Place, and within about ten Toises of the Sailant Angles of the Cover'd Way, there to

flow securely, and under shelter, all the Materials necessary for making the Lodgment on the Cover'd Way, being satisfy'd with having advanced the second Parallel between twenty and thirty Toises nearer than ordinary, ordered the Saps to be continued along the ridges of the Glacis of the three great Saillant Angles: However, to run no hazards in the mean time, but to be ready to fall into proper measures in case of an accident, though he had been at the Trenches according to his usual custom, from five of the clock in the morning 'till eleven, and from three in the afternoon 'till seven, he determined to stay all night to see what pass'd. Monsieur the Marshal *de Catinat*, who look'd on this night's business as decisive of the event, stay'd there likewise.

At night-fall, Monsieur *de Vauban* ordered the Earth of the Lodgment on the Glacis on one side of the Capital of the Ravelin, to be rais'd to an extraordinary Height, so as to be ready in the morning to enfilade with Plungings the left face of the Cover'd Way from that sort of Cavalier, while the *Ricqchett* Batteries scour'd the other side, if the Enemy durst stay there; but these preparations proved needless in the event. Messieurs *Filey* and *Richeraud*, Brigadiers and Engineers, were that night upon the Trenches-duty;

Trenches-duty; the first had the conducting the Lodgment upon the right, on the point of the *Limbourg* Bastion; and the second, the two others on the left, *viz.* that on the point of the Bastion of *Namur*, and that on the point of the Ravelin before the Gate of *Brussels*. The conducting the Attack of the Ravelin, and it's Communication with the Attack of the Bastion, were carried on together alternately with the other Attack, so that the two Brigades on duty took charge of both turn about.

Monfieur *de Vauban* being at one of these new Cavaliers with Monfieur the Marquis *de Catinat*, where he was overlooking the disposition of the Lodgment, received a blow with a Musquet-ball betwixt his Shoulder and left Breast, which, by good fortune, had struck a bag of Sand first, but, however, made a deep Contusion; it did not at all discompose him, nor prevent his discharging the duty of his station as before, during the remainder of the Siege; though, after the surrender of the Town, the wound proved considerable enough to require some care to be taken of it.

Whilst they were working at the Battery of *Belanger*, Monfieur *Richeraud* sent to inform Monfieur *de Vauban*, that, no body appearing upon the Cover'd Way, he had placed Gabions round about the Saillant Angle before

fore the Bastion of *Namur*, along the Palisades, so that the Lodgment, in effect, was made: Upon this we attacked the three Saillant Angles of the Cover'd Way; and every thing was so well concerted, that the Enemy, after a faint resistance, were oblig'd to retire upon the right and left; so that, by the 30th, we had made and compleated three Lodgments, with only three Men kill'd and eight wounded; the Chevalier *de Pizye*, Engineer, had his Arm shot through with a Musquet-ball, which made a large Contusion in his Side; the *Sieur de Vialis*, Engineer, had the end of his Thumb on his right Hand shot off.

The *Ricobett* Batteries never fired at all in the night, for fear of hurting our own People, which gave the Enemy an opportunity of making a great Fire upon our Lodgments from their Cover'd Ways which they had just abandon'd. The success of our Lodgment on the left, which answer'd fully what Monsieur *de Vauban* had propos'd from his Plan, gave him leisure to retire at midnight: But Monsieur *de Filey* had not been able to put the Lodgment upon the right in so good a condition, because it was four or five Toises farther distant from the Palisades, than the two others at the time he undertook it, so that it was not finished till the night following.

THAT

That

That night two pieces of Cannon were added to the right of the Battery of *Elbauf*, to fire upon the Sluice *H* before the Bastion of *Burgundy*, to help to destroy it; to effect which they had fired for two days from their great Mortars, throwing Shells of five hundred weight; not one of the Besieged appeared all this time upon the Ramparts, either on the Front or Sides of the Attack, from whence they might have extremely incommoded us, nor did they make the least Motions towards their Flanks, from whence they might have given us much disturbance; they neither brought Cannon thither, nor made any preparations to dispute our passage of the Ditch.

It look'd as if they had really been ignorant of the use of those essential parts of Fortification; but we rather imagine it owing to our *Ricobetts* taking their Flanks in reverse, which prevented the appearance of the Enemy.

The Enemy no where shew'd themselves but in the three Ravelins only; the two side ones gave us a good deal of uneasiness, though roughly handled by our Shells and Cannon, but, as our *Ricobett* Batteries gave 'em no disturbance, they stood to their Defences.

It is observable, that the Angles of the Polygon, being in this Fortification very open, threw forward the Ravelins, which
being

being very large and acute-angled, made their Defences extraordinary; their Fires, crossing each other before the faces of the Bastions, had almost the same effect as in a direct Line; so that, instead of having three Works, we had five to deal with, that is to say, the two Bastions, and the three Ravelins, which obliged Monsieur de Vauban to take in the whole, in order to carry on the Work in the Center with greater security; thus he encompass'd near half the Town, to enable him to come at the reverse of some of the Works; and a new Battery of *Ricochetts L* was appointed to enfilade the face of the Ravelin O, which extinguished that Fire so effectually that we had very little of it afterwards, either by day or night; the Battery C had the same effect on the Ravelin P.

These Ravelins were formidable on account of their greatness, and having Revetements the height of their Parapets; their Ditches, their Communications with the Tenailles, their Redoubts, all admirably well made; their Ramparts so good, and Parapets so substantial, that, for what little use the Enemy had made of 'em, they might still have been very dangerous; for it may truly be said of that Place, that the Works, and not the Men, defended it; and that it was the great Guns, Shovels,
and

and Pick-Ax which took it; for Marshal *Catinat* scarce made use of any other means than the industry of *Monsieur de Vauban*, who so well conducted the Trenches and Artillery, as hardly left the King's Troops any opportunity to signalize themselves.

The 30th at night, having compleated the Lodgment on the point of the right Bastion, Gabions were set all along the Palisades; and, the last of *May*, the several Communications were finished, and taken possession of from the point of one Bastion to the other; and they began working upon the Returns, without any other opposition on the Enemy's side than a thin Fire from the Ravelins, very indifferently made.

The night between the 30th and 31st, the Marquis *de Tins* mounted the Trenches on the right, with *Monsieur de Maissoncelle*, Brigadier, and three Battalions of *Navarre*; and the Count *de Grancey* mounted on the left, with two Battalions of *Poitou* and that of *Marche*. A Battery was erected on the Cover'd Way of five Pieces of Cannon, to batter in breach the faces of the two Bastions of *Namur* and *Limbouurg*, and the Ravelin of *Barbançon*, and to break the Bridges of Communication; they began likewise to work at the descent of the Ditch by close Sapps or Blinds, in which the Miners of the Company of
R *Maigrigny*

Maigrigny were employ'd : While this was going forwards, the Enemy fired a Fougasse at the point of the Cover'd Way of the left Ravelin on the Glacis there, which did us no mischief, we not being as yet got so far.

The 31st of *May* about six of the clock in the morning, one of our great Shells fell at last upon the Sluice of the Inundation of the Upper *Dender*, and the Sluice, with its inclosures, were destroy'd, notwithstanding the thick Planks and Dung with which the Enemy had cover'd it : The *Ricobett* Balls having broke in a part of the Dam across the Ditch, which supported the Waters of the Curtain between the Bastions of *Burgundy* and *Namur*, the Waters of the Inundation took their course through that Gap, which they enlarg'd considerably, forcing their way into the Ditches in the Front of the Attack, where they grew a rapid Torrent ; and, surrounding the Waters of the Ditch, empty'd themselves into the Lower *Dender*, and the Meadows below, insomuch that the Bridges of Communication both of our Quarters, and that of the Army of Marshal *Villeroy*, were in great danger of being carried away : Had this accident happen'd in the night-time, that had certainly been the case ; and, as it was, we had much ado to save them. Marshal *Catinat* and Monsieur de *Vauban*

Vauban got very luckily thither, and ordered all the Guards immediately to the Water-side, to turn o' one side the great floating Pieces of Timber which were falling upon our Bridges of Communication. The Town was overflow'd to such a degree, that there were four feet Water in the streets: The Waters filled the Cellars, whither the Citizens had withdrawn their best effects, for shelter from the Bombs, and did them abundance of damage.

In five hours time all that Inundation was gone off, to the great joy of the Besiegers, and to the much greater mortification of the Besieged, who saw that they had lost in that their most certain Defence, and which they did not so much as attempt to repair afterwards.

By eleven of the clock, all things were reduced into their natural state again; there was no more left of the Flood than the usual current of the *Dender* in the Ditch of the Attack. The Enemy, having barr'd its entrance of the Town, had very nearly occasion'd another Inundation on the side of *Irchbonnett* by the River *Leuze*, which might have proved as dangerous as that of *Maffle*, if it had once made a head; but they neglected it, either for want of some slight repairs, or of knowing what use to make of it. Whatever their reason was,

the mischief, which those great Bodies of Water were capable of doing us, was not confined to the Defence of the Place only, but would have affected our Bridges likewise, both those of the Communication of our own Quarters, and those of the Armies of Observation. If the Enemy had let loose the Flood upon us in the night, and, at the same time, had attacked one of our Armies of Observation, 'tis certain the other could have given it no assistance; but, thanks to the little diligence of our Enemies, all those Heads of Water became useless in their hands.

The same day, being the 31st of May, the Marshals *Villeroy* and *Boufflers*, and Count *Tholouse*, came to the Camp to visit our Trenches. Marshal *Villeroy* gave us to understand, that the Prince of *Orange* and the Elector of *Bavaria*, after advancing within three Leagues of us, and, finding by the Situation of our Armies that it was not possible to relieve the Place, had drawn off and divided their Forces; the Prince of *Orange* taking his Route towards *Namur*, to alarm the Garrisons of *Dinan* and *Charleroy*; and the Elector of *Bavaria* marching towards *Alost* to cover *Oudenarde*, after throwing four Battalions into it. This news, as it cut off all hopes of relief from the Garrison, left us at Liberty to make an end of
our

our Siege in quiet, and delivered the Court from any apprehensions it might have been under, on account of the March of those two Princes.

The four Batteries in the Center having ceased firing for some time, because of our Lodgments on the Parapets of the Cover'd Way, for fear of hurting our Men there, the Officers who served these Batteries were otherwise employ'd.

Monfieur *de Vauban* had all along taken great care to preserve the Town; a few Shells had flown over the Works of the Attack, and the same chance had likewise directed a few Bullets that way; but Monfieur *de Vauban* had taken the Houses, Buildings, Gates, &c. under his protection, all which made people imagine it was the King's intention to keep the Place; but the true reason was, that devastations and burnings contribute nothing to the taking of a Place, only consuming Ammunition to no purpose, and occasioning extraordinary charges in repairs afterwards; but, notwithstanding all his precautions, the Fire that day had unavoidably catch'd hold of the Cazerns behind the half Curtain on the right of the Gate of *Brussels*, part of which it consumed.

The night between the 31st of *May* and the 1st of *June*, the Trenches were reliev'd
upon

upon the right by the Marquis *de Larray*, and the Sieur *de Salis*, Brigadier, with two Battalions of *Anjou* and one of *Tournay*; and the Sieur *Dupuy Vauban*, Engineer, on the left, by the Marquis *de Clairambault*, with the two Battalions of *Humieres* and that of *Vexin*, with the Sieur *Dubois*, Engineer. We continued battering the Ravelin of *Barbançon*, and made a considerable Breach there, and began throwing Fascines into the Ditch to fill it up.

The 1st of *June*, having raised Cannon-Batteries on the Angles of the Cover'd Way of the Bastions, they began firing with some Pieces the same day. Then was the time for the Enemy to have made use of their Flanks, but, whether our *Ricochetts* prevented them, or whatever was the case, nothing was done; their *Tenaille* likewise might have been of service to them, which was not exposed to our *Ricochetts*, and was yet almost intire, but they fired not a single Shot from thence, nor made any use of it whatsoever.

Our Cannon broke down one of the Cross-beams of the great Bridge of the Town, being the Communication with the Gorge of the Ravelin.

We continued extending the Lodgments on the Cover'd Way towards the two Ravelins on the Flanks of the Attack, throwing
a great

a great number of Shells into those Ravelins, but without extinguishing the Enemy's Fire from thence. However, as we had now a view of the Communications, betwixt the Gorges and the Body of the Place, from our Lodgments on the points of the Cover'd Way, they could only pass backwards and forwards there by night, and from the right and left Shoulders of the Bastions opposite to those parts of the Cover'd Way which had not yet been attack'd.

We likewise endeavour'd to get a farther view of their Communications, by extending our Lodgments as far as the Saillant Angles of the Cover'd Way, and round the points of the Ravelins, which prevented their having any Communication with the Place, excepting by night only.

From the time the *Ricochett* Batteries were establish'd, the Enemy were obliged to keep off their Defences, which they quit- ted as soon as ever those Batteries begun to fire, which was more than Cannon-Batteries in the Front, or Bomb-Batteries would have been able to have effected in four or five days time.

The same day towards noon, the descent of the Ditch, upon the left of the point of the Ravelin, being far advanced by Monsieur *de Maigrigny's* Miners, the Angle having been considerably broken in by the five-Gun Battery, on the opposite point of the
Cover'd

Cover'd Way, Monsieur *de Vauban* ordered the Lodgments to be lined with Musqueteers, and a body of Grenadiers to advance with a party of ten Fusileers before them, commanded by a Serjeant; and, without discontinuing the Passage of the Ditch, ordered four Miners to mount the Breach, and to clear it in view of the whole Army. The Enemy, as soon as they saw them, threw some Grenades, which went over the Workmen's heads, and rolled down into the Ditch. The Hollow of the Breach cover'd our Miners from the view of the Bastions, and the Enemy durst not man their Works, fearing the effects of our *Ricobetts*: There were only a few Fusileers, who, firing some Shot now and then, killed one of our Miners, who happen'd to advance a little too high on the Talus of the Breach.

In the mean while, they continued throwing a great quantity of Fascines into the Ditch, and raising a strong Epaulement of 'em for a Defence from the Fire of the *Namur-Bastion*, which the Enemy suffer'd them to do quietly enough.

As soon as the Miners had made smooth the Ascent of the Breach, a Serjeant and twelve Grenadiers were sent up it, who, with a few more Workmen, made a Lodgment there, which they afterwards extended to the right and left, sheltering themselves

selves as well as they could behind their new-raiſ'd Parapet, and with a few Faſcines and Sand-bags.

The whole Company of *Artois* mounting it ſoon afterwards, ſome unthinking Zealots, who knew no better, ſet up the Standard of the Regiment there, which drew the Enemy out again, and the Firing increas'd on both ſides for a conſiderable time; the Enemy had almoſt a mind to renew the Fight, but it all came to nothing; the undauntedneſs of our Troops, and the fierceneſs of their countenances, put 'em quite out of conceit with the attempt, and the Lodgment was made and maintained: If we had not reſtrain'd the ardour of our Men, they would have leapt down upon the Ravelin, where there were ſtill about a hundred Men by the ſide of the Parapets, and behind a bad Retrenchment, which they were obliged to abandon a few hours afterwards, and to retire into the Redoubt at the Gorge of the Ravelin.

All this time, which was for about two or three hours, our Lodgments made a great Firing upon the Defences of the Enemy, which with the Shells flying without ceaſing, made a pretty brisk Fire for a conſiderable time. The Beſieged, who ſaw our new Settlement, without daring to attempt to diſturb our poſſeſſion, threw all they could lay their

hands on at us, in their Retreat: They threw, amongst the rest, fourteen or fifteen Shells upon that Angle where we were, from a small Mortar they had in the Town; but they fell all of them into the Ditch without effect, excepting one, which lighted on the Epaulement of one of our Batteries. Our People never stirred during all these Attempts of theirs, nor so much as threw a Grenade.

Monsieur *Vauban* returned to the Lodgment on the Ravelin; he made the disposition of it himself, and committed it to the care of Monsieur *Richeraud*, Ingineer: That night they compleated the Lodgment on the right of the Cover'd Way.

The night, betwixt the 1st and 2^d of June, the Chevalier *de Gassion* mounted the Trenches on the right, with the Marquis *de Vibray*, and three Battalions of the Regiment of *Artois*, *Catinat*, and *Berry*; and the Sieur *de Vilpion* on the left, with the Battalions of *Vermandois* and that of *Bugey*. That night we push'd on the Lodgments upon the Ravelin, towards a Retrenchment the Enemy had made before their Redoubt, in the form of an Arc of a Circle, and likewise carried on our Lodgments on the Cover'd Ways of the collateral Ravelins.

Nothing

Nothing remarkable happen'd that day, except that Marshal *Villeroy* came to visit the Trenches.

The Cannon Batteries being now establish'd before the Faces of the Bastions, they began to batter in Breach. There were Six twenty-four Pounders before each Bastion, and four more at each Return of the Parapet of the Cover'd Way, which were opposite to the Flanks of those Faces, and began to batter them.

As the business was now to fire with full Charges, and strait before 'em, the Gunners were in the Center, only they were ordered to cut the Wall in a direct Line about six Feet above the surface of the Water, all the Points of which Line, being struck together at the same time, soon produced the desired effect.

For, as it would have been a vain thing to batter the Flanks directly, since the Enemy made no use of them, we contented ourselves with firing upon 'em obliquely with those Cannon upon the Returns of the Parapet before-mention'd, and in the same Line, where we were sapping the Revetements, which gave a helping hand to the Strokes given in the Front; and those Pieces which could not be brought to bear in that Service, fir'd *en bricolle* or with Rebounds upon the Curtain behind the Tenaille, where the Ene-

my were in great numbers, and from whence they were obliged to retire.

The night between the 2^d and 3^d of June, Monsieur de Vaubecourt mounted the Trenches on the right, with the Sieur Lee, and three Battalions; and the Marquis de Hautfort on the left, with the same number. There were now twenty Pieces of Cannon on the Counterscarp to batter the Faces in Breach, and to ruin the Flanks opposite to the Attack of the *Namur* and *Limbourg* Bastions.

We had also one and twenty Mortars in Battery, along the Parapet of the Cover'd Way opposite the Gate of *Brussels*, in the Places of the Cannon which had made the Breach in the Angle of the Ravelin; the Mortars were directed to fire into the two Bastions.

Those, upon the right of the Angle of the Cover'd Way, were to fire towards the Bastion upon the left, and those upon the left towards the Bastion upon the right, and those Batteries having nothing before them but a Ditch full of Water, gave no manner of disturbance to our Works, or to the Parts where we were in possession.

Our three great Mortars we left at their old Battery, to save the trouble of removing them, one of which threw Shells of five hundred weight into the left Bastion; the other

other into the left Ravelin, particularly upon the Saillant Angle of it, which the Enemy did not abandon notwithstanding, whilst the third was still employ'd upon the great Sluice of the *Dender*.

There were, besides, forty-two pieces of Cannon in Battery, that is to say, twenty before the Points of the two Bastions, as has been said before, twelve more upon the *Ricochett* Batteries of those Bastions, and two which kept firing upon the Sluice, to prevent the Enemy from repairing it. Those thirty-four Pieces were each of them twenty-four Pounders, besides eight others employ'd in *Ricochetts* upon the collateral Ravelins, one half of which were twelve Pounders, and the other eight.

About eleven of the clock in the morning the same day, while we were carrying the Lodgment in the Ravelin forward upon the right and left to take in the Redoubt, those within it demanded to capitulate, our Cannon having broke down their Bridge of Communication with the Town; Monsieur *de Vaubercourt*, who was Lieutenant-General of the day, received them Prisoners of War. They had been shut up in that Redoubt since *Friday* the 31st of *May*, and had been summon'd, by Signals, to surrender. There were at first about seventy of them, with a Captain and two Lieutenants,

nants, five or six of whom were kill'd, and fifteen or sixteen wounded, at the time we made our Lodgment, coming out to reconnoitre.

The taking that Redoubt made us Masters of the Ravelin, on which we extended our Lodgment both towards the Gorge and the Shoulders, to favour us in our passing the Ditch; for, although the Enemy made no great Firing, it might not be so safe to expose ourselves.

About noon, a great Pane of the Face of the left Bastion about fifteen Toises long, fell to the Ground, beat down by our Cannon. *Monf. de Vauban* had prepared all the necessary Materials for passing the Ditch, concerning which he was divided in his thoughts; he knew there must be a Current left for the Water, and, though there could be no great Head above, after the great Efflux which followed the breaking of the Sluice, and the care taken to prevent the repairing it, yet so large a quantity of Materials as were going to be thrown into it, to fill up the Ditch, might occasion a back-water sufficient to carry away the Bridges, especially if the Waters from *Irchonwentz* should fall into it, which was not impossible; after having weigh'd all inconveniences which might happen, he determined to build the Bridge after

after the usual way, that is to say, with Fascines, but well loaded with Earth, and to stake them down with large Pickets, that they might take good hold of the bottom, proposing to himself to get a great many over this way, and the rest upon Tressels when the Flood began to be troublesome, by leaving a free Passage for the Current in the middle of about twenty or thirty Feet wide, and laying Planks over it, reserving the Miner for the last expedient, if there should be occasion to open and clear the Breaches, and by the tumbling down of the Rubbish into the Stream to compleat the filling up the Ditch.

Our Guns continuing to fire the evening and night following, and all the day afterwards, the Breaches were made to satisfaction.

On the night between the 3^d and 4th of June, the Trenches were reliev'd by the *Sieur de Bachevilliers*, and the *Sieur de Bligny*; and on the left, by the *Sieur Greder*, with three Battalions at each Attack; the Breaches were just ready for mounting; the Besieged had scarce fired at all since three of the clock in the morning, when they made a great Firing upon the Sapps, which lasted for about an hour, and afterwards upon the Embrasures of the Batteries, which were a little carelessly made, as too frequently happens where one has a contempt

tempt for the Enemy, having neither
 * *Portieres*, nor † *Fronteau de Mires*,
 which makes it very dangerous for those a-
 bout them. There were some Gunners
 wounded, and some killed, besides a Com-
 missary of Artillery, whose name was *Bel-
 langer*, a Man of reputation and a good Of-
 ficer, who was kill'd at the Battery upon
 the left.

A little before break of day, an Officer of
 the Place came to view the condition of the
 Breach of the Bastion of *Namur*; we com-
 pleted our Lodgments upon the Gorge
 of the Ravelin, and our Guns were widen-
 ing the Breach in the Bastion of *Namur* four
 or five Toises farther.

We carried on both Descents of the
 Ditch by cover'd Lodgments, with Blinds,
 (mark'd M and N in the Plan) from the
 Places of Arms or entring Angles between
 the Bastions and the Ravelins, having got
 together a vast quantity of Fascines and Pick-
 ets. We kept continually throwing Shells
 into the Bastions, and the *Ricobetts* fired
 both on the Bastions and Ravelins, as

* A Wooden Machine to stop up the Embrasures at the
 time of loading.

† An Instrument of Wood to set upon the Bridge of the
 Gun, to assist the Person that points it.

usual,

usual, which kept the Enemy off from their Defences.

The night between the 4th and 5th, the Trenches were reliev'd on the right by Monsieur de Tesse, and, on the left by Monsieur de Tesse-Sailly, Marshal de Camp. A part of the Revetement of the right Face of the *Limbourg* Bastion fell down about fourteen or fifteen Toises long; we continued firing upon the Breaches of the two Bastions to make 'em more practicable, throwing Fascines into the Ditch to fill it, and likewise throwing Shells without ceasing from the two twelve Mortar Batteries, each of which was placed on the Cover'd Way before the Ravelin, to prevent the Besiegers making Retrenchments in the Bastions. The two Breaches were each of them seventeen or eighteen Toises wide, and widening continually; we often fired within six Feet of the top, to break down the Parapet, that the fallen Earth might make the Ascent of the Breach more easy, and continued getting together Fascines.

'Twas remarkable, that the Attack on the left, though the younger Sister, was always more fortunate than that on the right; the Lodgments on the Cover'd Way were soonest made there; that upon the Ravelin on the same side succeeded well: The Breach was soonest made on that side, and always

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larger than that in the right. The Bridge for passing the Ditch upon the left, was finish'd, before that on the right was half so; and, lastly, 'twas upon the left the Town beat the Chamade.

The 5th of June in the morning, the Ditch was almost fill'd up by the Rubbish fallen into it, and with the Fascines; and the Talus of the Breaches were become so easy, that thirty Men in Front might mount that of the *Namur* Bastion, and twenty or twenty-five that of the Bastion of *Limbourg*. The falling down of the Parapets discover'd the Chevaux de Frize within the Breach of the *Namur* Bastion, but we soon broke 'em to Pieces with our Cannon. In the mean time, they went on filling up the Ditch of the two Attacks with Fascines, and laying Beds of Sand-bags a-top of 'em to sink 'em down to the bottom; when so many Beds were laid that the Heap was risen above the Surface of the Water, the whole was staked down by large Piles driven into the Ground to keep all firm together, and then heap'd on again at top as before. The Ditches were twenty Toises wide at the Surface, near seven Feet Water in the deepest, and betwixt three and four Feet Mud.

At ten of the clock in the morning, the Work, with it's Epaulements upon the left, was above half finish'd, and that upon the right

right a third part. We were obliged, at the first opening of the Sapps from the Cover'd Way, to make Epaulements on both sides, till the Angles of the Bastions cover'd the Reverse from the Fire of the Ravelins on the Wings; and it was upon this account that Monsieur *de Vauban*, who foresaw the great benefit of these Angles, took so much care to preserve them, and would not suffer the Breaches in the Faces to be made within the distance of three or four Toises of them, which was now of great service to us, for as soon as we were got half way over the Ditch, we had no farther occasion for an Epaulement but on the side next the Flank only.

At noon, the Bridge over the Ditch on the left was carried within eighteen Feet of the Foot of the Breach; we immediately got Planks, and other Pieces of Timber to throw over that Interval, which was to be left open for the Water-course, and began laying them when we were just ready to mount the Breach. The Bridge, which was to lead to the *Limbourg* Bastion, was not at most above half made.

About two of the clock in the afternoon, every thing being ready for the Assault, the Marshal *de Catinat* order'd twenty Companies of Grenadiers to attack the Place under the Command of Count *Marfin*, and

drew out a large Body by themselves at the Queue of the Trenches, that the Enemy might see them; he then marched to the Attack upon the left with Monsieur *de Vauban*, confidently assured that he should carry the Place by Assault. When they were got to the Foot of the Breach, a Cry was heard amongst our Men, That the Enemy were coming out upon the Breach. In the mean time, an Officer of the Garrison, a Major of Foot, came down from the Head of the Breach, as it happen'd the very moment the Marshal arrived there. The Officer of the Garrison came to desire Terms of Capitulation. Whilst this was doing, a poor frightened Drummer was beating the Châmade very softly in the Centre of the Bastion, not daring to venture upon the Rampart. The Marshal received the Officer's Proposals, Hostages were named immediately, and the Capitulation settled upon the following Terms.

That at six of the clock in the morning on the 16th, the Besieged should deliver up one Gate to the King's Troops: That the Garrison should march out the 17th at ten of the clock in the morning through the Breach, with their Arms and Baggage, and Drums beating, but without Cannon or Mortars, to be conducted in three days to *Dendermonde*, not to *Brussels*, nor to *Oudenarde*, as they had

had demanded ; to be furnished with fifty Waggons to carry their Sick and Wounded, six of which to be cover'd, but on condition they should be visited ; all Deserters to be given up, and the Besieged to send five Officers of Distinction to be detain'd, till ransomed by the Enemy's releasing five Persons, whom they had kept Prisoners in the Citadel of *Antwerp*, after the taking of *Namur*, under pretence of securing the Payment of what was owing to the Inhabitants of the Town from the *French* Garrison ; and whom they had refused to set at Liberty, though the King himself had frequently offered to discharge those Debts entirely, of which they would never give an account.

On the 6th day, Commissaries of Artillery and Provisions were sent to take possession of the Magazines, and make out Inventories. The Captain of the Miners went to see what Mines there were ; the Major of the Regiment of *Navarre* to reconnoitre the Gates, and the Grenadiers of that Regiment in the afternoon took possession of the Gate of *Mons*. The Besiegers sent a hundred and fifty Waggons into the Town to fetch the Sick and Baggage that were to be carried to *Dendermonde*, the Place where the River *Dender* falls into the *Scheld*.

The 7th of *June*, after making good the Highways of the Breaches, both within the Bastions

Bastions and on the Ascent, and placing a Guard of Grenadiers there, the Garrison began to march out at nine of the clock in the morning. In the Van of all marched a fine Company of Grenadiers, with the State-Major a Horseback; then the Prince *D'Anhalt*, the Governor, and the Major; the Governor saluted the Marshal, and the Count *de Tholouse*, who were upon the Spot. There were three *Imperial* Regiments of the Allies pretty good ones, follow'd by their free Companies, three Regiments of *Walloons*, and lastly, one *Italian* Regiment. A great part of the latter deserted to us, as soon as they came within the double Line of our Troops, the usual practice of the *Neapolitans*.

The Horse and Dragoons march'd out with the Baggage at the Gate of *Tournay*, and rejoined the Infantry at about a Mile distance. There marched out in all about three thousand five hundred fighting Men, Officers included.

The five Hostages for the Prisoners at *Namur* were at Liberty; they were the Prince *de Chimac*, Knight of the Golden Fleece, the *Sieur de la Catoire*, Lieutenant-Colonel, one Major, and two Captains, who were the same day conducted to *Valenciennes*. And thus the Town of *Ath*, one of the strongest Places in *Europe*, was taken in thirteen Days from the opening of the Trenches, without

without farther Loss than about fifty private Men, and the *Sieur Courtin*, Engineer, kill'd; the *Sieur de Fresne*, Ecuyer to *Marshal de Villeroy*, dead of his Wounds, and about one hundred and fifty more wounded, amongst whom was a Captain of Grenadiers of the Regiment of *Vermandois*, and seven Engineers.

There were in the Place thirty-one Pieces of Cannon and one Mortar; the Regiment of *Navarre* stay'd there 'till the 8th of the month, when eight Battalions march'd in.

The Government of the Town was given to the Count *de Tesse*, who was not yet well of his Wound.

As soon as the Garrison was marched out, six thousand Workmen were set to raze the Lines of Circumvallation, to level the Trenches, and to repair those Works of the Place which had been damaged by the Siege. The *Marshal de Villeroy* cross'd the *Dender*, and pitch'd his Camp with his left towards *Papigniers* upon the *Dender*, and his right towards the Forest of *Lessines*.

The Town of *Atb* was formerly a small Town, surrounded with Walls and a few Towers; the Keys of it were carried to the King, after the taking *Douay* and *Lisle* in 1667.

His Majesty, being desirous to make his Frontier more formidable, order'd it to be fortify'd

fortify'd in 1668; and Monsieur *de Vauban*, to whom that Charge was committed, neglected nothing that might contribute to make it a compleat Fortification. He formed two Inundations there, the most considerable of which is of the River *Dender*, which runs through the middle of the Town; the other is of the little River *Leuze*, which falls into the *Dender* at *Hirchbonwell*.

No Siege was ever carry'd on with so little Loss or Expence: The Charge of the Artillery amounting only to forty thousand Livres; and that of the Trenches, for the Workmen, Gabions, Miners, and extraordinary Expences to forty-nine thousand two hundred and fifty Livres, amounting in the whole to eighty-nine thousand two hundred and fifty Livres.

F I N I S.



1. 2. 3. 4. 5. *Gravel Battery.*
 - A. B. *Two twelve Mortar Batteries throwing shells of 250^{lbs}.*
 - C. D. E. *The three grand attacks.*
 - F. G. *Cannon Batteries.*
 - H. *The Sluice.*
 - I. *Battery of three Mortars throwing shells of 500^{lbs} to break the Sluice.*
 - K. *Gravel Battery of 4 pieces of Cannon.*
 - L. *A Battery.*
 - M. N. *Salage of the Ditch.*
 - O. *The Garden of Candron.*
 - P. *The Garden of the Grevels.*
 - Q. *The Ditch.*
 - R. *The Garden of Bartencon.*
- 50 100 200 300
English

